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Contributed and Selected

EMPIRICISM VERSUS SCIENCE.

JOHN URI LLOYD, PHAR. M.

Whoever attempts to individualize a scientific problem, becomes aware of the fact that, whatever it may be, it wedges into and dovetails with other problems from which no exact line of demarcation can be drawn.

A conspicuous example in this direction, contributed by the writer to the American Pharmaceutical Association Proceedings, 1879, is the fact that percolation and maceration cannot be, in the act of percolation, separated from each other. In fact, the very beginning of the process of percolation includes maceration, and during the process of percolation, maceration is a continuous factor. This, after an elaborate series of experiments and arguments connected therewith, the writer summed up, *American Pharmaceutical Association Proceedings*, 1879, as follows:

"In percolation, from the instant the stratum of menstruum commences to penetrate the material until it escapes we have maceration connected with alteration of the position of the mass of the liquid. There are continually new surfaces of contact formed as the liquid passes downward towards the exit of the percolator, and, as has been shown, in maceration this

phenomenon is also presented. There is no rest within the vessel while solution progresses. Mediums of greater specific gravity than the original menstruum are constantly forming, which, obedient to gravity, seek the lowest portion of the vessel, in turn to be displaced by heavier liquids. In this way during maceration numbers of percolating currents are flowing throughout the capillaries, and between the interstices of the material, as in percolation, while fresh portions of liquid are continually coming into contact with new surfaces, and saturations are giving way with perfect regularity to those not saturated.

"Thus circulation of currents progresses and will continue until an equilibrium is established, as long as there is soluble matter and unsaturated menstruum within the percolator, and afterward whenever the temperature is permitted to change. Therefore, maceration cannot be disconnected from percolation, and as we have seen, percolation must include maceration."

Let us apply the above as a text to "Empiricism versus Science," between which there would seem to be, as some view it, a clearly-cut line of division, but between which, in this writer's opinion, a sharp line of demarcation can no more be drawn, than between percolation and maceration. They, alike, wedge into each other; they dovetail, one into the other, and, each a part of the other, pass into thought and practice, even as scientific thought and study unite with empirical experimentation.

Placing ourselves, even superficially, in the position of the searchers after knowledge in days gone by, it becomes evident that, at an early date, theoretical or speculative processes gradually dominated the then scientific field, including chemical and therapeutic activity. In this direction, also, there seems to be no doubt that a connected religious process was injected, as a dominating influence, into all "material" problems, (even into such a study as entomology) in days gone by. Indeed, one needs go but a few centuries back, to discover that religious thought and complications dominated those engaged in the experimenter's field of that day, in a direction which even today is, by some, considered wholly materialistic, as though there could be any separation of matter and force, spirit and substance.

Be that as it may, there came a time when a section, at least, of the searchers in scientific directions rebelled against what were then considered ethically correct precepts, demanding that whatever was theoretically announced, must be practically demonstrated. It seems to be apparent that some of these revolutionists went even further, and proposed to establish the reverse of existing methods, by demanding that theory be subjugated to experiment, arguing, probably, that experiment established fact; that seeing a thing, was knowing that the thing existed; that touching an object proved that the object was there; that reactions between different materials were self-evident facts, and that the processes known as "Sensuous Experience," were the sole source of all ideas and knowledge. In other words, mental philosophy and theory were, by these reactionists, subjugated to what might be called the mechanical phases of elementary reactions. Thus, the therapeutic *experimentalist* demanded that all theory must be based upon experimental fact, and in contra-distinction to what in medicine might be defined as an entrenched, dogmatic school, he became, himself, a dogmatic skeptic.

"Their chief point of view was that of practical observation, as opposed to the theoretical speculations of the dogmatic school."—*Encyclopedia Americana.*

Thus came into the early field, as resisters of theoretical "dogmatism," a class of men who, scarcely less dogmatic, demanded that experiment be made primary, and theory secondary. To these people were given the name "Empiricist," de-

fined by the *Century Dictionary* as "one who believes in philosophical empiricism; one who regards sensuous experience as the sole source of all ideals and knowledge," a definition yet employed by many authorities in the world's literature.

To state it briefly, although Locke is by some regarded as the father of modern empiricism, it is evident that from a very early date, perhaps from all time, the principles involved in what is known as empiricism, have threaded the processes of dissenters less conspicuous than Locke.

We need scarcely refer to the fact that when empiricism in medicine and connected problems wedged itself into conspicuity, it became necessary to attack the entrenchments of previously established philosophical doctrines. The resistance that naturally followed created friction, and parties often needlessly became rivals, when, in this writer's opinion, they should have been allies, engaged in a common cause, but in different lines of thought and action. Be this as it may, in the time of Celsus and Galen, physicians became antagonistic to professional methods of the past. They laid great stress on physical changes, and often illogically excluded all-important theoretical study.

Thus the pendulum swung from a dogmatism in one direction to a dogmatism in the opposite direction, although, unquestionably, thinking men of all times profited by and gave credit, knowingly or otherwise, to the practical result of the combined efforts of all concerned.

Following the dogmatism of past theoretical doctrines, came a tendency on the part of the devotees of entrenched empiricism, to be not less overbearing than had been their predecessors. Remedies were so illogically described and prescribed, by reason of isolated individual experiences, as to bring discredit on the cause of the empiricist, to such an extent that, at a period perhaps impossible to determine, the name itself began to degenerate from its original meaning. The experimenter, or empiricist, unquestionably became hopelessly lacking in the direction of systematic, reasoning opportunities. The empiricist physician, relying too implicitly on the "unprejudiced observation of Nature," and believing that such observations must lead to unalterably perfect prescriptions, thereby lost his opportunity. Once more the pendulum swung back. The name "Empiricist" carried now with it the thought of an inadequate experimenter, whether in pharmacy, chemistry or medicine, and thus, rightly or wrongly, degenerated from the ideals of the past.

Having thus touched, briefly and superficially, a few of the changes that came through great periods of time, this writer does not hesitate to declare that, for himself at least, the name "Empiricist" has no terrors, nor can the word "Science" rightfully exclude experimentation. The man of science needs be gifted in experimentation, and the man who experiments needs be trained in scientific thought and action. As the man who percolates according to modern methods unites his efforts with those of the man who macerates a drug according to preceding processes, so does the true man of science today depend upon the experimenter of yesterday.

The man involved in pure scientific reasoning, foreseeing an opportunity by reason of his theoretical knowledge, devises a theoretical process that, without having yet been instituted, he accepts must give a satisfactory, experimental end-reaction. And yet, his theoretical knowledge is probably based upon previous observations by the experimenting chemist or pharmacist, whose reports concern-

ing changes observed, give to the advancing scientist his theoretical opportunity. Had not Sir Isaac Newton followed the line of reasoning instituted by the apple that before his eyes fell from the tree, perhaps for some time the study of gravitation would have been neglected. How could the astronomer of today predict with exactness the period of eclipses of moon or sun, but for the disjointed observations made by empiricists of times gone by, who noted and recorded the coming and the passing of the periodical eclipses? Did Madame Curie theorize in advance that the waste earth experimented with in her laboratory would yield the marvelous substance, *radium*, or, with a ray of experimental light before her, did she discover that substance through careful and thoughtful experimentation? And, without subsequent experiments, could the man involved in reasoning science, have given or accepted a theoretical explanation for the wonderful phenomena that radium presents to humanity?

Thus, in any line of reasoning or of experiments, we find that one dovetails into the other; that as one advances, so does the other; that the materialist, if so you will call him, and the theorist, are dependent, each upon the other. The theorist ventures into untried, experimental fields, with the suggestive thought, based upon past experiences, that such and such an action will follow. The materialist, following his lines of systematic experimentation, in turn presents to the theorist (perhaps himself) opportunities for mind research and explanation. But, above all, each should be ready, with an open mind, to catch the unexpected, for accidental discoveries may accrue, (as in the case of Madame Curie), and be of the greatest service to humanity, as well as of the greatest interest to the theorist. Together, they become "Science."

When La Place, reasoning from calculations made by observing the motions of the heavenly bodies, directed astronomers to point their telescopes to a certain part of the heavens where never a planet had been seen, predicting that there a planet would be found, did he not, mathematically, utilize the results of empirical observation, with the same certainty that the scientific man of today utilizes the results of the recorded observations of the empiricist who brings to him the report of experimental phenomena not before observed? This writer then asks, if there be a line of division between Empiricism and Science in chemical, pharmaceutical and therapeutic action, that each should regard the other as a friend and as an ally, in the cause of professional advancement.

In the opinion of this writer, as has been stated, rational experimentation cannot be separated from systematic thought and theories, nor can theoretical science separate itself from reactions observed in materialistic directions. No opprobrium should therefore be cast upon the man whose line of activity leads him into unknown fields of experimentation, nor should any touch of satire be cast by such a man upon him who, without experimentation, moves the world onward, by his scientific reasonings and deductions.

As one who comes into close touch with many men in advanced science, but whose field of activity is largely engrossed by empirical experimentation, this writer believes that the utmost cordiality exists today between advanced men engaged in these different spheres of activity, and that the true scientist no less regards the usefulness of an experiment that for the present may seem to be fruitless, than does the thinking empiricist deny the fullest credit to the man who perhaps never practically touches a materialistic, experimental object.

INTERNATIONAL CONGRESSES VS. THE EUROPEAN WAR.

JOSEPH P. REMINGTON.

The European war has come as a staggering blow to international work of every description. When the last shot has been fired and the dove of peace hovers over the world, it will remain to be seen whether international congresses will resume their meetings and whether these meetings will be harmonious, whether the passions of men, excited as they have been by militarism, will continue, or whether the reaction will cause men to forget the horrible disasters of the war and meet again to discuss and develop the peaceful arts.

That the United States of America may become the mediator is a "consummation devoutly to be wished." The almost unanimous feeling in this country is that the terrible carnage which now prevails should soon cease and peace and good will once more prevail.

It is greatly to be hoped that The Netherlands will escape further complications and that the Féderation Internationale Pharmaceutique, which has done so much in organizing scientific pharmacy throughout the world, will emerge triumphantly when peace is declared and in the rebound obtain greater influence than ever in its uplifting work.

It is a cause for congratulation that the American Pharmaceutical Association is a member of this International Federation, and surely it can be depended upon to join hands with Holland by assisting in the upbuilding work.

It is not likely that any international congresses will be held during 1915. The pharmacists of The Netherlands have had a most serious mission and they are busily engaged in raising funds to keep a large number of refugees, Belgians and others, from starving. What greater work can be done for our fellow craftsmen who have lost everything during the war?

The International Congress of Applied Chemistry, which met in September, 1912, adjourned to meet in 1915 in the city of St. Petersburg, Russia. It could not be foreseen by any one who was present at the notable meeting in New York that two years afterwards would see another side for chemical industries and death dealing explosives replacing the manufacture of health-giving chemicals to be used in the healing of the nations. The Ninth International Congress of Applied Chemistry will literally never meet at St. Petersburg, for its name has been changed to "Petrograd."

How can the "entente cordiale" be established? Many chemists and pharmacists who have been active workers in national and international science will have lost their lives in defense of their countries, but the hope is expressed that those who have been spared will be imbued with more zeal and that they will hasten to restore their fallen fortunes and recover as rapidly as possible from disastrous conditions, and that chemical and pharamceutical activities will be resumed and fully restored. Surely this must be the hope of American pharmacists!

It will be recalled that the International Congress of Applied Chemistry ap-

pointed a commission to organize a movement to establish international standards for drugs and chemical substances with the object of establishing uniformity throughout the world by legalizing standards which will be operative in every country. It cannot be expected that these standards can be established immediately even in times of peace, and, although a start has been made, the onset of the war has prevented effective work from being undertaken.

A resolution (tenth) which was approved by the Congress is as follows:

"(a) That Section VIIIb of the Eighth International Congress of Applied Chemistry consider the feasibility of International Standards of strength, purity, method of testing and nomenclature of pharmacopœial preparations.

"(b) Section VIIIb (Pharmaceutical Chemistry) of the Eighth International Congress of Applied Chemistry having received and discussed the report of the International Commission on 'Variation in the Activity of Toxic Drugs,' resolves that it is desirable that this inquiry be continued and that the International Commission be reformed and to consist of the following eight members:

"Austria, Prof. Wilhelm Mitlacher; France, Prof. E. Bourquelot; Germany, Prof. H. Thoms; Great Britain, Francis Ransom; Netherlands, Prof. L. Van Itallie; Russia, W. Ferrein, Mag. Th.; Switzerland, Prof. A. Tschirch; United States, Dr. R. H. True, and the following three secretaries: G. P. Forrester, F. C. S., European continent: Peter MacEwan, F. C. S., Great Britain; Otto Raubenheimer, United States.

"(c) It is further resolved that this commission be authorized to enlist the co-operation of other persons actively interested in promulgating international uniformity of standards for potent drugs and improvement in their cultivation and collection.

"(d) That the International Commission of Congresses of Applied Chemistry be requested to approve the organization of an international committee under Joseph P. Remington, and composed of chemical experts approved by this commission, whose duty shall be to collect information from every available source on chemical products and the essential oils used in pharmacy, and to investigate the tests now in use to prove the identity and purity of said products and oils; also to consider standards and tests with the view of establishing uniformity in the same throughout the world, and to report at the Ninth International Congress the results of its work."

In addition to this, the Eleventh International Congress of Pharmacy, in September, 1913, at The Hague, appointed a commission to continue the work towards the unification of the pharmacopœias of the world. This commission has a wide scope, but it will be observed that the objects and principles are the same as those of the commission of the Congress of Applied Chemistry. Medicines are not supposed to differ greatly in the therapeutic action upon men, women, and children, irrespective of their nationality, and many advantages at once appear if this great work can ever be accomplished.

When the war is over, commercial relations between the various countries will be vastly stimulated. Every nation will seek to repair the tremendous losses which have been incurred. International travel will be resumed on a large scale and it is believed that international standards will be sought. It is not likely that an international pharmacopœia will ever be published, but there seems to be no good reason why these two commissions working together cannot formulate standards for the more important potent remedies to the end that there should be little or no variation in the standards of strength throughout the world. While the work is temporarily halted by present conditions, the objects are so worthy that every effort should be made to bring about a consummation.

TWILIGHT SLEEP.*

PROF. C. W. EDMUNDS.

During the past year there has been a great deal of interest aroused in the popular mind in regard to the use of certain drugs to lessen the pains of childbirth by the production of the condition known in this country as "Twilight Sleep." It would seem from the sudden interest taken in the subject that the method was a development of only the past few months, but, as a matter of fact, the use of nonvolatile drugs in labor dates back several years, to 1902, and is preceded by their use in general surgical work.

It was in 1900 that Schneiderlin, desiring to reduce the amount of chloroform which it would be necessary to give for an operation for cancer, preceded the administration of the chloroform by an injection of morphine and scopolamine. The results were so satisfactory that later on he increased the amount of these drugs, dispensing with the chloroform entirely. The doses used were quite large, even up to 1 1/6 grains of morphine and 1/25 grain of scopolamine in 1¼ hours, and he advised that in case of hurry a dose of morphine ½ grain and scopolamine 1/60 grain be given. He published his results in ten cases, and recommended the method highly as he considered it perfectly safe.

Two years later Blos published the results he had obtained in 105 cases, in which series there had been one death. Following these papers, the method was extensively used in general surgical work, but as statistics showing its dangers were gradually gathered, the method quite rapidly fell into disuse.

It was in 1902 that Von Steinbüchel suggested its use in obstetrics, and in his second paper he gave the details of its use in twenty cases. He used doses of 1/6 grain morphine and 1/200 grain scopolamine, which doses he said might be repeated if necessary. In contrast to Schneiderlin, the papers of Von Steinbüchel were very cautious in their tone. In the next few years the use of these two drugs in obstetrics was tested in many of the European clinics, and after a more or less extensive trial the method was given up in practically all of them. In Freiberg, however, the procedure was still used and further developed until the Freiberg method or some slight modification of it has come to be the one most generally recognized in this country.

One of the drugs which has been used is Scopolamine (which has also been named Hyoscine), an alkaloid found in Scopolia atropoides, Hyocyamus niger and other plants of the Solanaceæ. It is optically active, rotating polarized light to the left. Straub's scopolamine contains mannite in order to prevent deterioration. The other drug used is morphine or some substitute which has been introduced for it. In some clinics pantopon, a mixture of all the opium alkaloids introduced by Sahli, has been tried, but it has not given much satisfaction as it has been found to be too toxic.

More recently Narcophen has been introduced and it is being extensively used. This drug is a mixture of the meconate of morphine together with the meconate

*Read before Detroit Branch, A. Ph. A., March 19, 1915.

of another of the opium alkaloids, narcotine. About one-third of the weight of Narcophen is morphine. This preparation is the one now being used in the Freiburg clinic.

Briefly stated, the method is as follows: The first injection of narcophen ½ grain and scopolamine 1/150 grain is given as soon as labor is well established as shown by the fact that the uterus is contracting for about thirty seconds every four or five minutes. Three quarters of an hour after the first injection, a second is given, this time of scopolamine alone—1/150 grain. The further dosage varies for each patient and is determined by repeated memory tests. This test is carried out half an hour after the second dose by showing the patient some object, or by asking the patient, for instance, how many injections she has had, or some such question, and making note of her answer. Her memory is tested twice again in like manner by showing the same object or asking the same question at intervals of half an hour; and if after the second test the memory is still retained, a third injection of scopolamine 1/200 grain is given. Further injections of scopolamine are given as necessary in order to maintain the desired end, which is the abolition of memory. The pains are perceived by the patient, at the time, but upon awakening afterwards she has no recollection of them. It is also true that in a very considerable percentage of cases there is a very distinct lessening of the pain itself.

As to the advantages of the method, it may be said that in about seventy percent of all cases there is not only loss of memory of the pain of labor but also relief from the suffering. In about ten or twenty percent more there is no loss of memory but only some relief from the pain, and in the rest of the cases the method is a failure.

In regard to the disadvantages, one of the first which may be mentioned is the complex technic necessary. It is practicable to carry it out only in a hospital, as constant attendance and absolute quiet are essentials. If it is to be done in a private home, it means the transporting of physician and one or two nurses to the house for the entire time of labor. The patient must be watched very carefully, and the child requires constant attention as its heart rate must be counted every fifteen minutes in order that labor may be terminated quickly by operative measures in case the child is discovered to be in danger.

The second stage of labor is apparently prolonged, causing increased danger to the child and making it necessary to use forceps more frequently. And finally as to the danger to the child, there seems to be no doubt but that more frequently than normal it is hard to get the child to start breathing. This applies not only to cases of true asphyxia but also to the condition known as oligopnea in which the respiratory movements are much interfered with for some little time after birth, due to the depressing action of the two drugs.

Many reports are being published which are very favorable to the method, but it is also true that there are in addition reports of the deaths of a number of infants for which no other explanation could be given, than that the drugs used in the production of the twilight sleep were responsible for them.

To summarize, it may be said that it is probably true that the condition of Twilight Sleep is in no way harmful to the mother, but that it is believed today that it involves some increased risk to the child.

AMPULS.

THESIS PRESENTED BY HERMAN H. NORTH, PH. G., DEPARTMENT OF PHARMACY, COLLEGE OF JERSEY CITY.

THE EVOLUTION OF THE WORD "AMPUL OR AMPOULE."

The newer Pharmacopœias have been practically enforced to give ampuls a place by the always evident Pharmacopœia elegans, inasmuch as ampuls have lately come into extensive use.

The etymological origin of the word "ampul" in English, or "ampoule" in French, is not absolutely clear. There are two possibilities. It may have been derived from a diminutive of a Greek word "amphora," or from a lost Latin word "ambolla," compounded from "amb-olla." But the Latin and Greek languages are offsprings of an older mother language, supposedly the Indo-Germanian language. If we trace either "amphora" or "ambolla" to their original shape in the presumed Indo-Germanian language, we will find the same ideas prevalent. "Amphi" in Greek and "ambo" in Latin, mean the same and lead to the idea of a vessel having a handle on each side.

In German the development of the word "Zuber" is the same. "Eimer," from "ein-ber," meaning one handle, and "zuber," from "zwei-ber," meaning two handles, designate different vessels bearing one handle, or others bearing two handles. It is clear that originally the vessels called "amphora," needing two handles, must have been very large, and indeed they were.

We find such vessels corresponding to the denominations "amphora," in old Egyptian pictures, in excavations of Schliemann of Troy, and in some pictures and excavations of old Greece and Rome.

In some instances, this "amphora" had a standard capacity. In olden Greek times, this "amphora" had a capacity between eight and a half and nine gallons. In the later time of the Roman Empire this capacity was decreased to only six gallons.

Besides these enormous vessels, there were also small oil containers used for illuminating purposes, having chains attached to them on both sides, as parts of candelabra. These small oil lamps had two handles attached for the bearing of chains or strings, and were also called "ampulla," and therefrom originated the small hanging lamps called "ampels," which are still used in Germany, Holland, Sweden and Norway.

This word "ampul" was known two thousand years ago, as a rare word in the old Latin language, and it became more frequently used in mediæval Latin of the Catholic Church and in Medicine.

Large vessels gradually assumed a special shape. The possibility of these vessels carrying large amounts of a liquid led to a belly-shaped vessel. The possibilities of contamination by contact with the air, evaporation or spoiling while pouring out the liquid from large orifices of these belly-shaped vessels led to the construction or rather the formation of vessels having narrow necks.

Henceforth, a large vessel, flask-shaped or belly-shaped, having a long thin neck, with no handles, was the only remaining form prevalent and all other forms

and shapes were forgotten. The first perception can be traced back two thousand years ago, whence the adjective "ampullaceus," and not "ampulla," applied or rather designated a vessel as above described.

Plinius used this adjective "ampullaceus" to designate a pear which was belly- or flask-shaped, having a thick or rather broad belly and a long thin neck. During mediæval times the pilgrims to the Holy Land used to carry water contained in flasks made from pumpkins, having the above described shape. The older shape, namely, having two handles attached to the "ampul," was lost in mediæval times for the word "ampulla" itself.

From now on, the ampul assumed the shape of a container having a large belly and a small neck, which was made from different kinds of colored glass and even earthenware and leather, and later on of pumpkin skin.

In the Latin of the Catholic Church, we find small "ampulla" holding holy oils or blood of martyrs. In Canterbury and Rheims there were "ampuls" containing holy oil used for crowning the Kings of England and France.

In the Roman Church, they have "ampuls" containing wine and water for use in mass, and others containing oils were used for different sacraments.

In Scientific Botany and Biology the word "ampulla" is often used, which in Morphology designates flask-shaped cavities.

In French "ampoulette," Dutch and Swedish "ampulette," refers to a vessel which does not have handles on both sides. It refers or rather designates a vessel, bulbed or rather bellyed at each end and connected by a long thin neck, through which ran sand at certain time intervals, as for example, a quarter of an hour or half an hour, and which was called an hour-glass. The sand was placed in one end of the vessel and as it ran through the neck into the other vessel, it would thereby designate the time. When all the sand ran into one vessel, it was then inverted and in this way they used to differentiate the hour, or rather the time of the day.

In modern times the word is still used in some Romanic languages; but in these languages the word has partly a "u" and partly an "o" as the original "amphora" or "ambolla."

"Ampulla," or the respective derivative word of these modern languages, means a flask, bottle, jar, pot or other vessel swelling in the middle and furnished with two handles.

The latest development was to use the word "ampoule," originating in France, designating some kind of little flasks of glass with long necks and closed or rather sealed by the gas flame and enclosing volatile liquids for chemical purposes. From these ampoules the pharmaceutical "ampoules" have been derived. In English and German this word is generally written "ampul."

DISCUSSION.

Among the noteworthy advancements in the preparation of medicinal agents, the ampul has attained a very useful position. It has made it possible to administer with celerity, accurate amounts of sterile solutions, of definite strength and known therapeutic value. These solutions are injected subcutaneously, intramuscularly or intravenously, but rarely by other methods of administration, as for example, ethyl chloride. The field of administration of such injections

has greatly increased because they are rapidly absorbed, while certain of them are delivered directly into the circulation. Therefore much loss of time and imperfect absorption of the medicinal agent and waste is avoided. Furthermore, gastric intolerance to certain drugs or serious tax upon the digestive organs may be mostly eliminated. Convenience and safety are the keynotes of ampul therapy, while quickness and directness of action are features deserving scarcely less emphasis. To date, no container has proven as practical as the ampul, which for evident reasons has become immensely popular with physicians.

HISTORY OF MEDICINAL AMPULS.

G. Pegurier says that the first ampuls were Pasteur's pipette and the sterile flask, which were suggested in the course of his researches on bacteria by a desire to obtain pure cultures by using an absolutely sterile medium and to preserve these cultures from accidental contamination by extraneous organisms.

It was about thirty years ago, that Limousin, a French pharmacist, proposed the ampul as a convenient method of preserving hypodermic solutions, while a paper describing ampuls was published in the "Bulletin Generale" of the "Societe de Therapeutique" for April, 1886.

In foreign countries, especially in France, this method of dispensing has attained its greatest popularity. In 1905 in a great many Russian pharmacies, ampules were filled by use of the hypodermic syringe or by heating and dispensed on prescriptions.

The French have made a very general use of this form of medication which is as popular in the Latin countries of Europe as the hypodermic tablet is in the United States. In time the hypodermic tablet will give way in popularity to the ampul for general use in the United States. As a matter of fact the principal danger of infection in the use of ordinary hypodermic injections comes not from the solution but from the syringe of the physician, who does not use sufficient care in sterilizing it before putting it into use.

FORMS OF AMPULS.

The largest ampuls on the market are the ethyl chloride ampuls. Ampuls vary greatly in capacity; large ampuls being used for massive injections of saline solutions. The form varies as widely as the capacity. The original form proposed by Limousin consisted of a round bulb with a neck drawn out to a small tube, therefore the name ampul, as explained in my introductory chapter. The dropper ampul has been introduced by many large manufacturers for dispensing chloroform. The tubes of concentrated spirit of nitrous ether and those of ethyl-chloride are also put up in ampul form which were originated by Bengué. A special form of ampul which can be used as a hypodermic syringe called the "Omnium Ampoule," is of French origin and is now also made by American manufacturers.

MANUFACTURING OF AMPULS.

Glass Required for Ampuls.

Tending to cover such a wide scope of uses, the ready ampuls must be fit for all kinds of fillings. The best glass that can be used for such ampuls is a neutral glass, that known as Jena Normal 16 III or that termed Fiolax glass, white or

amber, as ordinary glass contains soluble alkali, which affects the solutions therein contained. For example, ordinary glass will precipitate crystals of strychnine which may be small enough to pass through a hypodermic needle and cause great pain when injected into the tissues. For solutions which are changed by the action of the light, as ferric solutions, apomorphine or physostigmine solutions, ampuls of amber glass should be employed.

GLASS TESTS.

A good method to try out the glass is to fill the ampuls with a one percent alcoholic solution of phenolphthalein and boil them for about half an hour. If the solution yields a pinkish color, then the ampuls should be rejected.

In order to test for the presence of the soluble modification of silicic acid, place some of the ampuls in one hundred cubic centimeters of tenth normal potassium hydroxide solution and boil for one hour. Then concentrate it down to ten cubic centimeters. Then let it stand for twenty-four hours and if a turbid precipitate of silicic acid is formd, the ampuls should be rejected on account of the presence of free soluble silicic acid.

The Swiss Pharmacopœia directs that the empty ampuls should be rinsed with dilute hydrochloric acid, followed by distilled water with the idea of neutralizing excess of alkali.

If the ampuls are cleaned one day with hydrochloric acid, they should be washed well and cleaned for twenty-four hours with an alkali or better still, inverted, clean first with alkali and the second day with acid.

THE MAKING OF THE EMPTY AMPULS.

The manufacture of empty ampuls has developed into a special business both in Paris and in Thuringia, Germany. Among the leading manufacturers of the empty ampuls are Adrain and Fournier of Paris, and Fridolin Grenier of Neuhaus am Rennweg, near Jena, Germany. Where the dispenser is unable to purchase the ready-made ampuls, he can make them himself, from Jena glass tubing, if only ordinarily skillful in glass blowing.

With a little care, it is very easy to make ampuls for your own special use. Take a small Jena glass tube about half an inch in diameter. Close it at one end by heating it in a blast or an ordinary bunsen flame. Heat it again, this time further up, until it becomes soft and with a gentle pull and twist, an ampul can be made, which is as good as that made by any manufacturer.

By blowing a current of air into the side of the heated ampul, a spout is formed which is very useful for keeping and pouring out liquids. Such ampuls can be used for keeping chloroform, ergot, digitalis and strophanthus solutions. From the above, we can see that there is really no excuse for anybody saying that ampuls cannot be made because the empty ampuls are hard to obtain. With just a little tact and manipulation, one can make hundreds of ampuls within a short time.

CLEANING THE EMPTY AMPULS.

Place the empty ampuls into a suitable vessel of distilled water, bring to a boil, remove the flame and pour cold distilled water on the ampuls as they float in the boiling water. They at once fill themselves. Again bring to a boil, when all or nearly all the water will again be expelled. Then sterilize in an oven at 120° C.

METHODS OF FILLING AMPULS.

The methods of filling ampuls may be divided into three classes:

1. By Gravity. 2. By Pressure. 3. By Vacuum.

Under each of the above headings, a description of the working of one instrument will be given in full, which will in all probability apply to all instruments, although differently constructed, yet working upon the same principles.

Every ampul to be filled must have a larger capacity than the contents therein to be placed. This is on account of sealing, because it is absolutely impossible to seal the neck of the ampul in the flame if the point and surrounding neighborhood is not absolutely dry, because wet glass in the flame cracks.

BY GRAVITY.

A very simple form of gravity filler and one easily understood is a burette. As the burette is accurately graduated, it makes it very easy to measure the amount of solution put into each ampul. As the opening of the burette is quite large, compared to that of the ampul, all that is necessary to do, is either to close the opening of the burette a little by the aid of heat or else attach a piece of rubber tubing to it, having attached at one end a small glass tube.

All that is necessary to do, is to pour the sterilized solution into the burette and cover the top of it, so as to prevent any contamination of the solution. Then by placing the ampuls on a rack or holding them in the hand, the solution can be easily poured into them to the desired amount, sealed and then sterilized.

The only possible objection to this method may be the fear of contamination of the solution, but this seems to be rather untrue. If the filling of the ampuls as above described, is performed in a room where no current of air is circulating, contamination is almost improbable. In one of the universities, twenty-four hour, gelatin cultures of the air of a room were taken, and it was found to be perfectly free from any bacteria, so that the above method of filling ampuls can be carried on with absolute certainty that the ampuls will be bacteria free.

The commercial filling of ampuls should be carried on in places remote from large cities because there is less danger of contamination by germs.

A kind of multiple burette is used by Paillard-Ducatte of Paris, under the name of "Semplissodosseur." There are other modifications of the burette which are used and employ the same principles. For example, the Pegurier and the Falck stock bottles which involve more or less the same principles of gravity filling and therefore employ and work by the same method as that of the simple burette and therefore require no further explanation.

In the same way since about two decades (1896-7) Professor Alexander von Poehl of St. Petersburg filled his spermin ampuls with 1.7 cc. of a solution, which contained physiological salts in the same proportion as those found in the blood.

PRESSURE FILLER.

The hypodermic syringe furnishes a convenient and simple form for filling ampuls. An all-glass syringe should be used for filling ampuls by this method. A syringe of this kind allows perfect asepsis and accurate dosage. All that is necessary to do, is to sterilize the syringe by boiling it in distilled water. All parts of the syringe can be taken apart, so that complete sterilization of the

syringe is possible. The syringe is then filled with the solution and gradually poured into the ampuls, filling them with any quantity of the solution desired. The ampuls are sealed in the bunsen flame and then sterilized.

In the Journal of the American Pharmaceutical Association, May, 1914, Mr. H. A. B. Dunning, of Baltimore, said that a very simple process in use, in his establishment for making camphorated oil ampuls, was to simply fill the ampul by using the hypodermic syringe, seal the ampuls and sterilize them.

The only possible objection to this method may be that the air in the ordinary dispensing room would be contaminated. This can be overcome by the manufacture of an aseptic hood, consisting of an air-tight box provided with a glass window in the top and a glass side through which light may be admitted, the front containing two arm holes through which the hands of the operator may be thrust. A bunsen burner can be also placed in the hood with a suitable outlet for the gases and in this way the process of filling and sealing can be carried on aseptically.

FILLING BY MEANS OF A VACUUM.

The best method for filling ampuls is that in which the use of a vacuum is involved. A rather ingenious method of filling ampuls by vacuum has been tried by Dr. J. Leon Lascoff and found advantageous.

This apparatus has been fully described in a paper on "Camphorated Oils in Ampules," in the Journal A. Ph. A., Vol. 3, 1914, p. 689, in a paper which was presented by the chairman of the section on practical pharmacy and dispensing at the Nashville meeting of the A. Ph. A.

This is a very simple method and can be operated by almost anybody. The principle involved is that by removing the atmospheric pressure of fifteen pounds to the square inch, the liquid will rise in the ampuls to the height of the air pressure plus the pressure exerted by the weight of the solution.

The quantity of liquid that the ampuls contained has been measured and each ampul has been found to contain exactly 2 cc., which in the case of a bichloride of mercury solution, represented seven and a half grains of bichloride of mercury.

Camphorated oil ampuls have been filled in the same manner.

There are many other devices used by different people which work practically under the same principles involved above and therefore need but mentioning of the makes. An apparatus used by Fairchild Bros. & Foster, also the Eury apparatus described by Pegurier and the apparatus described by Spindler in the Pharmazeutische Zeitung for 1908, made by Auer, of Zurich, all work by vacuum and work by principles similar to that described above.

The above described apparatus is probably the most convenient and satisfactory method of filling ampuls, also inexpensive to construct and easy to sterilize and can be used not only on a small scale, but also on a large scale, for by adding more glass containers you can increase the filling so much more. Its use is well within the limits of any enterprising pharmacist.

TO TEST THE SEALING.

In sealing the point of the ampul, it is not always easy to make sure that the sealing is perfect. This can be readily tested by boiling the filled ampuls in a solution of methylene blue, one grain to two ounces of water, and allowing the

ampuls to remain there until the solution cools. In case the tubes are imperfectly sealed, the color will show in the contents of the ampuls, after having cooled in the solution.

STERILIZATION.

The importance of complete sterilization of ampuls and their contents cannot be too strongly accentuated. Its extreme importance can be seen from the coming Ninth Revision of the United States Pharmacopœia and the Fourth Revision of the National Formulary, which contain a chapter on sterilization and from which the following matter has been in part taken. Much care must be exercised at every stage of the operation of making solutions and filling them to insure complete sterility. The utensils, the solvents and the substances used must be sterilized and protected from contamination.

The term "Sterilization," as employed in the practice of medicine and pharmacy means the destruction or removal of bacteria or their spores and other living organisms. This may be accomplished in various ways. depending upon the nature of the object to be sterilized. A sterile condition can be maintained only as long as the substance or object is kept from contact with air or other media which may carry micro-organisms.

These organisms may be pathological. In this case, it would be very harmful if a solution of this nature would be injected into a sick person. It would undoubtedly create a new sickness but a danger of this kind is not very great compared to a second danger, in that the germs which are not pathological at all, are constantly splitting and changing the dissolved organic compounds contained in the solution. In this case, it is very much more important that the ampuls be sterile, more so than the injecting syringe because the contained liquid remains months and years in contact with the ampuls, whereas it only remains a few minutes in contact with the injecting syringe.

GLASS UTENSILS.

These may be sterilized by heating them from 160° to 170° C. for two hours in a hot-air sterilizing oven or in a closed vessel (autoclave) under steam pressure at a temperature of from 115° to 120° C. for fifteen minutes. Heating in a current of steam for thirty minutes, or thoroughly boiling for fifteen minutes in water or an aqueous solution of sodium bicarbonate (1-1000) will kill all non-spore-bearing organisms and some spore-bearing organisms. As the presence of even a minute quantity of alkali is frequently objectionable in glass containers, the process of sterilization should in such instances be preceded by a thorough cleansing of the bottle, ampul or other receptacle with one percent hydrochloric acid, followed by a thorough rinsing with distilled water.

It is also possible to sterilize with an alkali solution but must be followed by a new cleaning with an acid solution.

MEDICINAL SOLUTIONS OF SUBSTANCES NOT READILY DECOMPOSED BY HEAT.

Solutions which are not injured by high temperature should be sterilized in a current of steam or in an oven in a closed apparatus (autoclave) by steam under pressure.

Sterilization in a current of steam should not be concluded in less than thirty minutes and the heat should preferably be continued for one hour. An exposure

of from fifteen to twenty minutes is sufficient if the sterilization is carried out in a pressure apparatus at a temperature of from 115° to 120° C.

MEDICINAL SOLUTIONS OF SUBSTANCES READILY DECOMPOSED BY HEAT.

With substances affected by heat there is danger of decomposition at high temperatures and Tyndallization or intermittent sterilization must be resorted to. In these cases the ampuls should be heated to 60° C. for half an hour at intervals of twenty-four hours for three or four consecutive days.

SUBSTANCES DECOMPOSED BY HEAT.

Hager's Handbuch der Pharmazeutischen Praxis, states that solutions of the following substances are liable to decomposition at the boiling-point of water: Atropine, cocaine, hyoscine, scopolamine, duboisine, physostigmine, atoxyl and ergot solutions. Acid hydrochloride of quinine and urea is also liable to be decomposed.

From the statements of other scientists, chemically pure products of these alkaloids and other compounds can stand a very much higher temperature than 100° C. without any decomposition. It is not the object of my thesis to decide these contradictory statements.

It is not to be wondered that some of these questions relative to ampuls are undecided, as ampuls have only been lately introduced and therefore more special research work is needed.

ADVANTAGES OF AMPULS.

The fluid preparations of ergot, digitalis and strophanthus deteriorate more or less rapidly under ordinary conditions. The principal causes of such deterioration are oxygen of the air and heat, therefore recently manufacturers have taken advantage of ampuls and are putting up preparations of the above substances in ampul form. It is a known fact that fluidextract of ergot retains its activity for a much longer period of time when kept in well-filled and tightly-stoppered containers, which precautions can be had through the use of ampuls.

Ampuls are always ready for immediate use. It is no longer necessary, as in making up solutions from powder or tablet, to wait until the water can be sterilized and cooled. The solution is accurately adjusted to contain a specific amount of medicament in each cubic centimeter, thus insuring accuracy of dose.

The solution is ascepticised by heat or by filtration through porcelain, as its nature demands. The drug is treated with the most suitable solvent, whether that be olive oil, distilled water, or physiological salt solution.

Permanence is attained by means of the hermetically sealed container which protects the contents from bacterial contamination and from oxidation, while actinic effect of light is prevented by the use of amber ampuls and by enclosing the glass ampuls in an impervious cardboard carton.

In hospitals, the preparation and preservation of solutions is a matter of little difficulty but to the busy general practitioner it is a source of annoyance and inconvenience and to say the least, is in many cases decidedly unsatisfactory; hence, the advantage of using ampuls.

Especially during war time, a great deal of ready medicine must be at hand, both on the battlefield and in the hospitals. It is true that many tablets and

powders are always ready at hand, but how much more convenient and time-saving would the ready ampul be.

It is absolutely necessary that only distilled water be used, as ordinary tap water, on account of the presence of bacteria and foreign matter, is objectionable. Few physicians have distilled water constantly on hand in their offices, and especially in time of war, the possibility of securing distilled water in a non-contaminated room, on the battlefield, is hopeless and to procure the necessary amount from the usual sources of supply, at times of peace and more so during times of war, is time-consuming and otherwise inconvenient, hence the advantage of using prepared ampuls.

It is manifestly all important that solutions for hypodermic injection should be sterile. It is likewise evident that physicians are very frequently unable to prepare sterile solutions extemporaneously, especially on the battlefield during times of war and therefore by using ampuls, all of these difficulties can be overcome.

THE POSSIBILITIES INHERENT IN A COLLEGE OF PHARMACY FOR RENDERING THE MAXIMUM OF EFFICIENT SERVICE TO PHARMACY.*

FREDERICK J. WULLING.

I am to speak upon the future possibilities inherent in the St. Louis College of Pharmacy. The possibilities of this college are the same in kind, as those of any other. The fundamental purpose of any high-grade college is, or should be, to render the maximum of efficient service to the calling and through the latter to the public. To render the most efficient services a college must meet many requirements and must conform to some quite definite standards. Some thoughts that have come to my mind in the matter I have formulated into an outline which I submit herewith and which I will use as the basis of some remarks:

Composition of the college.—1. Governing body, 2. faculty, 3. quarters, 4. equipment, 5. students, 6. alumni. All of these are organized to render the maximum of efficient service to (a) the student body, (b) the profession, and through these to (c) the public.

Under the heading of governing body comes the consideration of business administration, which includes executive faculty officers; budget; clerical assistance; card indices; statistics; co-operation with faculty; appointments; salaries and salary scale; faculty promotion; research; fellowships; scholarships; publications; future development and extension work.

Under the heading of faculty comes the consideration of organization, which includes executive faculty; executive officers; classification of teachers into dean, professors, assistant professors, instructors and assistants; conferences; aca-

* An address delivered at the fiftieth anniversary of the St. Louis College of Pharmacy.

demic freedom; sabbatical year; administration of educational matter; relation to governing body; relation to students; ratio of teachers to number of students; relations with other faculties; co-operation; promotion; salaries; research; fellowships; scholarships and extension work.

Quarters should be well-located; abundantly lighted, naturally and artificially; spacious; modern; sanitary; fireproof; well-adapted, and preferably a separate building.

Equipment should be, sufficient in quantity; adequate in kind and variety; up to date; extensively used; systematically kept, and inventoried.

Under the heading of students comes a consideration of the kind to attract; entrance standards; courses of study both undergraduate and graduate; rating of work in "credit hours"; conduct and discipline; honor system; employment while at college; organization; health conditions; moral standards; graduation standards; and degrees.

The alumni owe it to the college to keep in touch with it; send qualified students; advise in conduct of college; and uphold college ideals by precept and practice.

GOVERNING BODY

I will consider the first two divisions, governing body and faculty together.

Any college of pharmacy to be successful in the rendition of a maximum of efficient service must have a general aim and ideal, and a policy and a suitable and well-constituted organization to carry them out. This organization must include the governing body and the faculty. The respective functions of these two divisions within the organization should be designated, by conference and agreement, as clearly and definitely as possible, although in many respects the line can not be drawn very closely. In a general way, the governing body (the regents of universities and the dean, or the trustees of other educational bodies or associations and the dean) is usually and logically the dominating division, and has in charge the financial administration and, with the aid of the faculty, determines both the business and the educational policy of the institution. In the case of weak institutions the cause of the weakness can usually be found in the governing body, which, through indifference or incompetence or failure to fully recognize its duties and responsibilities on the one hand, or through unfavorable or uncontrollable conditions on the other, is unable to provide and maintain adequate quarters and equipment and a competent faculty for the fullest exercise of the purpose for which an educational institution is supposed to be created. In some few cases it appears that the governing body and the faculty are made up in whole or part of the same persons.

The second division of the organization is made up of the faculty. Where there is a weak governing body the weakness usually extends into the faculty and into all other divisions, while correspondingly a strong and well-qualified governing body establishes and infuses strength into all divisions. In some cases a strong faculty or a strong executive officer of the faculty succeeds through affirmative influence upon the governing body, in developing the college into a tolerably efficient working unit. These cases are not so rare as would generally be supposed. Indeed, in numerous cases, it is a single individual, usually clothed with some authority,

who sets the pace and formulates the ideals to be reached, and by patient endeavor and hard work corrects or overcomes the weakness or indifference of the governing body. A strong governing body will concern itself with the establishment of a sound financial basis for all divisions, resting upon a sufficient and equitably distributed budget to provide and maintain a representative faculty, adequate quarters and a well-selected and balanced equipment. An organization thus composed should divide the responsibilities of its functions into (a) a business administration, and (b) an educational administration; the governing body assuming the former and the faculty the latter.

BUSINESS ADMINISTRATION

The business administration, of course, is relatively important in that it must provide the funds for the conduct of the institution, and because the nature of the conduct depends upon the quantity of finances. There are practically only two classes of pharmaceutical teaching institutions in this country, and their division is based largely upon the sources of their finances. These sources are, on the one hand, primarily the student-bodies; on the other hand, the student-bodies and the States. In the former case there is often required a very careful and economical business administration, and because of the insistence of some of the teaching departments, as over against the claims of others the division of the finances is not always equitable unless the practice is followed of considering the needs of each department in the light of the needs of all departments and crystallizing the agreements into the form of annual or biennial budgets. In this part of the administrative work the faculty should render much assistance. Indeed, the organization should provide that the dean and the heads of faculty departments agree upon the distribution of the sums available for the educational administration and then submit their recommendations to the governing body.

Aside from the administration of the financial affairs, the business administration should provide for a sufficient clerical force, whose duty among others it should be to keep a complete set of books and from which should be compiled annually much information in the nature of statistics, which should be card-indexed for ready reference. This business record should include information as to receipts and disbursements, as to moneys paid for salaries, for supplies and for office staff, an index of the supplies, including their cost, etc., acquired annually under the respective budget divisions, etc. There are firms who make it a business to systematize other businesses. They do this often at a very low price, and money thus expended usually bears much fruit.

EDUCATIONAL ADMINISTRATION

Next in importance to or possibly co-equal in importance with or even superior to the business administration is the educational administration. This educational administration should be vested exclusively in the faculty, the latter, of course, subject to the governing body. A representative faculty is one composed of members who possess a high degree of attainment not only in their chosen fields of work, but also in the more academic fields of scholarship and in culture. It is imperative that they possess as the first essential pronounced abilities to teach. They should have a special pedagogical training and should be versed in

psychology and logic and philosophy. They should have a pronounced love for their work and should carry it on with enthusiasm and be able to communicate their enthusiasm to their students. They should be men of representative personality and of some affairs, and should be able to measure themselves satisfactorily with the successful teachers in other professional callings. The men in the higher ranks should possess not only the ability, but should also have the necessary incentive and time to carry on research work. The academic freedom which has so greatly contributed to the development of educational institutions in this and other countries should be enjoyed more fully by members of pharmaceutical faculties. They should also enjoy the advantages of the sabbatical year. It would redound greatly to the benefit of the college if it were an established rule that the men in any of the professional ranks be given the opportunity of a year's work and study in a foreign country, or even in some of the higher institutions of our own country at intervals of seven years. Where the sabbatical year is recognized the professor is usually away on leave of absence for either a full year at half salary or a half year at full salary.

THE FACULTY

The faculty should be composed of an executive faculty, accountable to the general faculty; an executive officer, who usually is and should be the dean; professors, associate professors, assistant professors, instructors, and assistants. The faculty should formulate all educational policies as well as establish the courses of study, the entrance and graduation requirements, the method of interpreting the work of students in credit units, the rules for the conduct and discipline of the students—in short, should administer upon all the educational activities of the college and be responsible only to the governing body. All faculty actions should be final only after approval by the governing body unless the latter has given the faculty power to act in either a general or special field.

CO-OPERATION OF FACULTY AND GOVERNING BODY

The governing body and the faculty should co-operate in the selection and appointment and in the promotion of faculty members, always with the fact in mind that it usually is not an easy task to find the right man at the low salaries offered, and that on this account great care in the selection of permanent additions to faculties should be exercised, lest insufficiently competent men lower the faculty standard. It would be a good plan to more universally adopt the practice of some colleges of appointing instructors from year to year and assistant professors and associate professors for periods of three years. This arangement relieves both parties of embarrassment and the obligations are understood on both sides. Appointments of full professors are usually for an indefinite period, the unexpressed understanding being that the teacher who has reached the full professorial estate has also acquired the qualification to continue his work satisfactorily.

Many governing bodies have erred greatly in the past by bestowing academic titles on teachers wholly unqualified for such distinction. Indeed, there are numerous cases in which, instead of any salary or a sufficient salary, services were rewarded by titles which were often but not usually deserved. In this way pharmacy has been greatly abused, especially the title of professor.

The two divisions should further co-operate in establishing fellowships to foster research and in creating other opportunities for research; in providing scholarships for worthy and capable students; in promoting a continuous and developmental growth, including possibly extension work, and in other matters, such as a proper ratio of teachers to students; faculty salary scales; social work among students, including a study of their health conditions, environment, associations, entertainments, moral and social standards and suggestions for the improvement of these; rules of student conduct and discipline; student publications; honor system; relation of the college to other colleges and to organizations; college publications; maintaining the interest of the alumni in the college and securing their help and advice in the conduct of the college, etc.

The faculty should have frequent conferences, in which the members should harmonize and co-ordinate the work of the curriculum, each with the full and intimate knowledge of every other members' work and responsibility, to the end that each can give the fullest measure of effective service to the students and to the college. The work of a faculty is distinctly inferior where each member carries on his work independently and without regard to the work of the other members except in a very general way. It is the duty of the dean to see that the divisions and units or departments of a college co-operate and co-ordinate in all respects, even in the less important details, and that every member of the faculty is concerned at least as much in the welfare and success of the college as a whole as those of his own particular department. Over-development of some departments as against others should be avoided because it disturbs that balance in the nature and conduct of work which should characterize the efficient and high grade college. I do not hesitate to say that in the average faculty there is not enough co-operation and coherency to insure a maximum of efficient service.

For the most effective service the faculty should be a separate organization and should work as a unit. To facilitate its administration work, much of the work should be apportioned to appropriate committees; the heads of departments should constitute the executive faculty and the dean the administrative officer whose powers should be defined largely by the governing body. Individual effort and growth should be stimulated and recognized, especially in the lower ranks of the faculty. No two persons possess identical ability or capacity, but in the absence of special agreement the entire effort and ability of every full-time member, whatever it may be, quantitatively and qualitatively, should be contributed to the college. Every faculty member is doing his duty to the college if he contributes conscientiously the entire product of his activity, irrespective of quantity or quality (though these must, of course, measure up to a certain minimum), to the common cause and purpose of the college. Team work is the only kind of work faculties should do, and team work is the concerted work of a number centralized into one common purpose to produce that degree of efficient service which only earnest and willing working together will bring and which is the only kind of service any faculty should deem itself worthy of giving.

FACULTY AND STUDENTS

The faculty and the students should always co-operate to produce the best results for each. Much of the advice given to students is also applicable in a

degree to the faculty. The presumption is that the members of faculties always have in mind the fact that they also are students, but of a maturer growth, and in this light the faculty has duties to itself as well as to the student body.

The most important and far-reaching duty which the faculty owes extends, of course, to the student body. The students soon become the responsible practitioners. They carry with them the fullness or the paucity of ideas and ideals instilled into them during their student days; as the faculty so the students, in a large measure. While I would not belittle the importance of a well-rounded and conscientiously taught course of study, I yet would subordinate it to the imparting to students of high aims and lofty ideals in human conduct; to the students' development of a high sense of moral responsibility; to the creation within the students' hearts of an enduring love and enthusiasm and respect for their chosen calling; to the students' recognition that capacity for self-help and the continuous and capable exercise of that capacity and the effective use of specialized knowledge is far more necessary and resultful than the acquisition of much mere information subject to neglect and loss by the memory; to the students' conviction that the exercise of the reason, the use of sound and well-considered judgment, the practice of logic and the habits of order, sequence and accuracy are the essentials for personal and professional development, and that their opposites in an equal or even greater degree retard growth and usefulness and therefore impair quality of service. Students should be imbued with the fact that mere knowledge is of no inherent or intrinsic value if it is allowed to lie dormant and latent, but that its real value lies in its judicious use and application to purposeful ends, and that the capacity developed in its acquirement makes the students correspondingly competent to administer upon more and more difficult problems as they appear. Not only is the victory worth while, but the struggle is even more so. The faculty which believes in easy and lax methods and is indifferent in its graduation requirements and fails to advance very markedly the students' professional and personal ideals falls far short in the successful exercise of its duty and fails to recognize the very large opportunities for and the great privilege of rendering upward service which its place in the college gives it. In the ultimate the value of every individual to humanity is measured by the quality and quantity of service rendered, and, according to the law of cause and effect or the law of compensation, or whatever one may call that principle which balances things, capable and unselfish service weighs more heavily than any other factor. This matter of service is constantly impressed upon students by some faculties, and emphasis is laid upon the fact that any kind of training must include not only the possession of a sufficiently wide scope of knowledge and the ability to add to it and to employ it wisely and effectively, but also all those other virtues that mark and distinguish the cultured and refined and unselfish and devoted practitioner.

QUARTERS AND EQUIPMENT

Adequate quarters are a very real necessity for the conduct of the best kind of work. No matter how competent the worker, if he is not properly housed or quartered, he is unable to do his best. In general, quarters should be well located, abundantly lighted (naturally and artificially), consistently spacious, modern, sanitary, fireproof, well-adapted and preferably constitute a separate

building. The location determines in a large measure the usefulness of a college. Obviously, the college should be located in the largest center of population of a given geographical district, and the more convenient the location within this large civic center the better. If the quarters constitute a separate and well-planned and adapted building, the possibility of service is that much enhanced. In the planning of quarters, as a rule, not sufficient attention is given to the lighting problem. The quarters should be lighted naturally from all points of the compass and provisions should be made in the planning of the building for access of sufficient daylight. The quarters should be consistently spacious. Overcrowded and cramped quarters are not much better for efficient work than too spacious rooms, in which the traversing of large areas consumes much time and strength. It is obvious that the quarters should be modern, sanitary and fireproof. Good sanitary conditions are essential to good health and the safety of the occupants of the building requires that the latter be fireproof or that it have sufficient protection against fire. One of the most efficient protections against fire in buildings that are not fireproof is the sprinkler system. This is recognized by the fire underwriters, and buildings equipped wth this automatic sprinkler system are insured at a much lower premium than other risks.

Equipment is another of the essentials for producing the best results in the work of a college. Equipment should be sufficient in quantity and adequate in kind and variety. It should be up-to-date, be extensively used, systematically kept and carefully inventoried. Much could be said on the matter of equipment, but time and space forbid.

CONCLUSIONS

A college which meets the standard I have hastily and all too incompletely presented to you, is fitted to render a service to pharmacy and to the public that is correspondingly equal to the service now rendered by any college representative of other professions. If all colleges of pharmacy were of this standard, their combined influence would soon place pharmacy into its rightful rank of co-equality with other learned professions. The service which a highly developed profession of pharmacy can render is as valuable, dignified, responsible and respectable as that which any similar agency in any human activity can render. Why should pharmacy be so modest and self-effacing as it appears at present to be? There is no reason that I would regard as sufficient. If pharmacy does not enjoy the same respect accorded to other learned callings, it surely is not because it does not merit similar recognition. At present pharmacy lacks self-assertion and the recognition of its rightful place in human affairs. Education is fundamental. Pharmacists as a class are under-educated, and for this condition they themselves are responsible. The awakening must come through pharmaceutical educators and through pharmaceutical educational agencies. Others will not elevate pharmacy, except that through widespread pharmaceutical incompetency a reaction might be initiated by the public which would demand a much higher grade of pharmaceutical service than is now the rule, and which it might seek to secure through legislation.

The St. Louis College of Pharmacy already meets in a very large degree the standard I have suggested. To meet it fully and even to exceed it is one of its

possibilities. With the sure foundation of fifty years of useful work and service, and with the valuable tradition behind it; with an enthusiastic faculty ever ready to recognize the growing needs of the times, and with a full knowledge of the necessity of valiant and persevering industry to succeed in the struggle of existence, the college is ready and willing and able to become acceleratingly useful with the passage of years. The history of the college is enviable. Its half-century of valuable service and influence has created for it the present duties of fostering even higher ideals; of entering upon an even more unselfish endeavor to stimulate and increase its service; of affiliating itself with every activity in the interests of higher educational and professional standards; of increasing its influence for better and higher pharmacy throughout the southwest, and thereby correspondingly throughout the country. The college, no doubt, is fully aware of these increasing duties and responsibilities, and can be trusted to meet them in a capable and competent manner, for it is written, "The glory of this latter house shall be greater than that of the former." The former house, your fifty years of enviable service, is the heritage into which American pharmacy has come; a heritage which we all cherish alike and which, full of honor and accomplishment and emulable tradition, becomes the foundation for the latter house. The former house was begun with splendid forethought and skill, with unselfish devotion to high ideals, with a consecration to high purposes and achievement, and with creative genius by those early pioneers in pharaceutical education who have gone on to their reward, and whose courageous enterprise and hallowed memory we so deeply respect and honor, and to whom these splendid exercises are in a large measure dedicated. If all of those early founders could be with us to-night, how they could glory in their work, and how satisfied they could be with the structure for which they laid the foundation, and which their successors so nobly and unselfishly reared. Pharmacy owes them a deep debt of gratitude which can be repaid only by a continuation of their work in the same unselfish and sacrificing way in which they began it, and by a devotion to everything that tends to the fullest fruition of their noble aims. The latter house now to be reared is replete with possibilities of still greater service and achievement, the fruition of possibilities depending only upon the firm resolve and enthusiasm, courageous work and untiring perseverance of those entrusted with the continuance of the work so nobly begun by those who should be counted as among the fathers of American pharmacy. May they so build on that future generations may say, "They builded better than they knew."

THE CULTIVATION OF MEDICINAL PLANTS.*

F. A. MILLER, M. S.

A brief historical review of the subject of drug cultivation in the United States reveals the fact that the subject is not a new one. It is only the revival of an old topic under modern ideas and more attractive possibilities. Concerning the introduction of this work in America, we would doubtless be safe in saying that the first medicinal plants to be cultivated were the so-called "kitchen herbs" in the gardens of the earliest settlers. As early as 1735 Collinson obtained over fifty kinds of "curious seeds" from the Chelsea Physic Garden of England, and Marshall, 1781, was one of the first to attempt the cultivation of the opium poppy in this country. Small gardens containing miscellaneous collections of plants, some of which might be classed as medicinal, were started in different localities only to be abandoned after a few years. Most of these were established for educational purposes and some are still in existence. In these, however, medicinal plants did not predominate, but were only supplementary to certain other families or groups of plants.

Not until the early part of the nineteenth century did medicinal plant-growing appear to have attracted sufficient attention to be considered as a commercial enterprise. The American Garden Calendar enumerates a large number of plants which could be grown in temperate climates and gives general directions for collecting and drying herbs, roots, seeds, etc. In this connection some of our present investigators of medicinal plants seem to be following this early example of McMahon in his Garden Calendar in still enumerating long tedious lists of what they call important medicinal plants and which they emphatically claim could be cultivated successfully in this country upon a commercial scale.

The most extensive operations ever carried on with drug producing plants in this country, were those of the Shakers. They began the work as early as 1800 at the original settlement at Mount Lebanon, New York. It seems they soon established quite a business in medicinal preparations from their cultivated drugs and the work was subsequently taken up by other Shaker colonies, particularly at Union Village, Ohio. Some idea of the amount of drugs produced by the Shakers as compared with the present demands may be gained from the statement that they produced at Lebanon as much as forty or fifty thousand pounds annually. This amount would about equal the average weekly demands of any one of the larger manufacturing concerns of today. While this movement spread somewhat in the Shaker community it never became very general. The Tilden Company, of the same locality, are said to have had as much as forty acres planted to medicinal plants. We find, however, that the work of Tilden & Co. was discontinued about 1880, and the operations of the Shakers gradually diminished until they finally attracted no more attention.

*A lecture delivered to the Purdue Pharmaceutical Society at Lafayette and to the School of Pharmacy at Valparaiso University.

In times past the United States has shown itself capable of supplying materials, not otherwise produced here, which have been cut off by conditions of war. This has been true of opium, which was produced in considerable quantities during the Revolutionary War, the war of 1812 and the Civil War.

At the present time we are feeling the strain of similar conditions and find many of the most important European vegetable drugs not only cut off from the regular channels of trade, but also declared contraband of war. The list of drugs of strictly European origin which might be successfully cultivated in this country is not a large one, especially when we consider only those which are actually essential to the modern practice of medicine and those which from the nature of the plant we might reasonably expect could be grown and cultivated with some degree of certainty. In this list we have such drugs as aconite, belladonna, colchicum, convallaria, digitalis, gentian, henbane, opium, stramonium and valerian. Before seriously considering the cultivation of any of these, they must be studied carefully for peculiarities which may make it impossible to grow them successfully upon a commercial scale. The first thing to consider before deciding what forms one would attempt to grow is a reliable seed supply. This question apparently does not worry the prospective drug grower until he is actually ready to begin, and some have been known to purchase land, erect drying shed, etc., before really knowing what they would grow, or where they could obtain seed of plants of the various medicinal forms.

In the above list, take for instance, aconite. Seeds of Aconitum napellus, the official species, may be obtained from several reliable seed firms of the United States. However, with good seed once in hand, we find that all difficulties are not immediately solved. The question at once arises as to how these should be sown. The average farmer or layman knows and considers but one method of seeding for commercial operations. This is the open field method and unless it can be practiced successfully there is little chance of rapid progress. Aconite is usually considered a tuberous rooted plant with the tubers constituting the part used in medicine, the leaves being little used. These tubers do not reach maturity before the end of the second or third season so that when successfully seeded the plants must be grown through two or more successive years before a crop could be harvested. As to seeding we find that aconite is not easy to germinate even under the most accurately controlled conditions of a greenhouse. This eliminates field sowing and greatly increases the cost of production to say nothing of experienced labor and unusual equipment, such as greenhouses and hot beds. Aconite is often grown as a garden form, where its tall, stately stems, surmounted by the spikes of dark blue flowers are both beautiful and interesting. This is no argument, however, that aconite would be an easy crop under field conditions. In this respect we find too many mistakes have already been made with medicinal plants. Many medicinal plants or their varieties have long been used as garden or decorative forms and upon this fact alone, sweeping statements have been made that they could be easily and economically produced upon a commercial scale. Even some college authorities who have strongly advocated drug cultivation have been accused of committing this error.

Whatever the sources of error, however, it is time for their correction as well as time for the adoption of more conservatism in the statements of those not in-

fomed upon the difficulties of commercial drug growing. To cite an example, a well-known writer in pharmaceutical circles, in giving directions for growing henbane, states in extremely brief language that "culturally it could be associated with stramonium, cannabis indica, tobacco and belladonna." The absurdity of the association of such a group of plants from the standpoint of production is self-evident. A biennial, if we are to consider the pharmacopœial species of henbane which reproduces from seed with much uncertainty, has given repeated crop failures in England and has been so difficult to handle in the United States that at one time the government, as well as some individual workers, had given up their investigations of it, is here classed with a group of plants containing annuals, biennials and perennials, of widely different cultural requirements. Of this group, stramonium and cannabis are annuals of very easy culture, probably no easier one could have been selected than cannabis, and the difference between its cultural requirements and those of henbane could hardly be greater. In the case of tobacco we have a plant, old in cultivation, where all details of propagation, cultivation and improvement have been highly perfected, as contrasted with henbane upon which practically nothing has been accomplished. Belladonna, the last named of the group with which henbane is associated, is a strict perennial of decidedly different requirements. It might be grown either as an annual, harvesting both leaves and roots at the end of each season, or left on the ground for three or four years, harvesting only the leaves annually. It requires a calcareous soil, and takes from four to six weeks for seed germination. We do not know the soil requirements of henbane and good seeds germinate in from six to eight days. As to the actual details of planting, cultivating, harvesting and curing, all of the above forms differ widely and no two of them could be handled by exactly the same method.

Returning to the list of plants under discussion we find that colchicum would give difficulties very similar to those of aconite. The parts used consist of the seed and the underground portion in the form of a corm. Seed may be obtained from manufacturers and crude drug dealers as well as from some European seed firms, but they appear to be very difficult to germinate. I have tried many samples from the colchicum seed of the drug markets and one sample from Haag and Schmidt which was supposed to represent fresh seed, but so far have failed to germinate any of them. The seed has a very hard resistant seed-coat and it is possible that some special treatment may be necessary to facilitate more ready and uniform germination. This difficulty alone is sufficient reason for discouraging any attempt at commercial production without some investigations.

Convallaria, another one of the drugs mentioned, presents a different story. The rhizome is most commonly used and there is probably sufficient of the plant already under cultivation in this country to meet the usual demands for some time. Supplies of stock plants can easily be obtained and propagation from root cuttings offers no serious difficulties. Convallaria would be one of the easier medicinal forms to grow should such procedure become necessary.

In belladonna we find one of the most important of the group of vegetable drugs. The commercial supply of the crude drug has come almost entirely from central Europe. This source of supply is now completely shut off by existing conditions and previous crops have largely passed into the hands of manufac-

turers. As to the near future, the prospects of the drug being collected and marketed are extremely poor. Thus belladonna is one of the most promising medicinal plants from the standpoint of commercial supply and demand. To correct a common and rather widespread idea that this plant might be collected from the wild source in the United States, it should be clearly understood that belladonna (Atropa belladonna) does not occur in the wild state in this country in sufficient abundance for collection. The belladonna of the United States is nothing more than the little nightshade, Solanum nigrum, of common occurrence and which could in no manner serve as a substitute for the true European belladonna.

During the past ten years considerable knowledge has been gained on the cultivation of belladonna in the United States. The investigations of the Bureau of Plant Industry of the United States Department of Agriculture have furnished some valuable information upon the behavior of the alkaloids in the belladonna plant. In California the cultivation of belladonna has been fairly well established in certain localities, but the amount of marketable drug produced there has so far not been sufficient to decrease the annual demands for the foreign drug. The development of this industry has been slow and expensive and many times so discouraging as to almost cause its complete failure and subsequent abandonment. However, the present opportunity promises to be a great stimulus to these efforts and should go far toward seeing belladonna culture in this country, placed upon a sound commercial basis.

Viable seeds of the true pharmacopœial species of belladonna may now be obtained from several reliable sources in the United States in sufficient quantity for both experimental and commercial plantings. One of the most discouraging features of the cultivation of belladonna is the long period required for seed germination. This difficulty places the production of the plant outside of the class of regular farm operations and compels the grower to adopt methods with which he is not ordinarily familiar. When we consider that the seed requires from four to six weeks to germinate, even when under the influence of greenhouse conditions, the difficulties of field sowing are at once apparent. In the central states where weed growth on cultivated land is so luxuriant that almost constant cultivation is required, beginning a few days after the crop is sown, there would not even be a "struggle for existence" in the case of belladonna, for the simple reason that it would rarely come into existence in competition with our rapidly growing weeds. In some of the southern states where growing weather extends through from eight to ten months of the year and where the fall growth of weeds is not a serious factor, field sowings of the seed might be practiced with some degree of success. In our locality, however, experiments extending over several years have demonstrated that the only sure method of obtaining a good stand is by forced propagation and final transplanting to the open field. As to the rate at which plants may be handled by this method we find that an experienced man will move from the seed pans to plant flats or pots, from fifteen hundred to two thousand seedlings per day. This is when the man is working alone and doing all the preliminary work such as soil mixing, filling flats, and other details necessary to such operations. Transplanting to the open field is usually performed at the rate of one thousand to fifteen hundred plants per day. A good man with two helpers to space and drop the plants will work somewhat

faster but his average will not greatly exceed fifteen hundred. Spacing the plants three by three feet in the field will require approximately forty-seven hundred plants per acre. Only rough calculations are necessary to demonstrate the need of cheap but efficient labor in handling a crop of this kind. A mechanical device has been constructed, however, which by the use of three men, not necessarily experienced in handling plants, and a two horse team, will transplant at the rate of from three to five acres per day, at the same time watering each plant and putting on an application of commercial fertilizer.

Everything is not accomplished, however, when the plants are successfully established in the field. In fact the work has only commenced. Subsequent cultivation for belladonna may be about the same as for corn until the plants begin to branch when some forms of single plow must be adopted. In the meantime the crop must be protected from insects and other plant diseases. In this respect the problems involved are somewhat different from those of regular farm crops. In this particular instance both the leaves and roots of the plant are used. This means that any arsenical insecticide applied to the plant, must be used with great caution, or the arsenic, held mechanically upon the surface of the leaves and stems will eventually find its way into some finished product. However, if persistent efforts are made during the earliest stages of growth, the common potato beetle, which is probably the worst insect to contend with, can be eliminated for the entire season. Thus, by the time the plants have reached a size sufficiently large for collecting, the first leaves of the young plants which may have received an application of insecticide have dropped from the stems. The safety of this procedure is evidenced by the free use of arsenicals on cabbage and other garden forms during the early stages of growth. Plant lice have also given serious trouble on belladonna but these can be controlled with any effective nicotine solution. The volatile nature of this substance makes it a perfectly harmless insecticide which may be freely used.

Having protected the plants from insects by some method and carried them safely through the growing season, the approach of harvest brings forth another series of problems. The first to suggest itself will have reference to the time of collection. When the final product is placed on the market its percentage of total alkaloids will be one of the important determining factors in judging the quality, and whether it is belladonna or some other form there will be some definite stage in the development of the plant when the yield of alkaloids or other active principles will be greatest. This condition should determine the time of collection and it can only be ascertained by the collection and testing of many series of samples.

Other questions which the grower would be compelled to answer would be the method of collection for both leaves and roots and the manner of curing these when once they were successfully harvested.

To continue with the list of European drugs we find that it is the opinion of many practitioners that really active digitalis comes only from England, Germany, or some other source, known only to the man who compiles the information on the label. There is in Oregon and Washington an abundant growth of good digitalis which shows an equal value with either the German or English drug. This source of supply could easily take care of the entire demands of the United States. With this abundance of material within easy access it would not be

necessary or wise to attempt the commercial cultivation of digitalis. Those wishing to do so may easily obtain seed of Digitalis purpurea from any reliable seed firm. It cannot be sown in the open field, as several writers have stated, but must be propagated about the same as belladonna. It is a hardier plant, however, and may be carried through the seedling stage at a somewhat lower temperature. It flourishes in the ordinary cold frames and may be placed in these with perfect safety as early as March 1st. Only the leaves of this plant are used. The present pharmacopœia requires that these be collected from flowering plants. It is possible, however, that the revision committee will respond to the influence of recent research upon this subject and eliminate that part of the requirement which refers to the flowering plants. Digitalis being a biennial, the present pharmacopœial requirement makes it impossible to even think of growing the drug at a profit. Indeed it is doubtful whether it could be cultivated and harvested at the end of the first year with any hope of financial returns.

Gentian was another of the drugs mentioned and is one which holds a rather important place in medicine. It would be a promising drug plant to have established in this country, but we must begin at the beginning. Let us not prepare to grow gentian until we at least have gentian to grow. As in many other instances we find that we cannot obtain good seed of Gentiana lutea. I have had seed of this species from Erfurt, Germany, but it failed to germinate. Looking a little further into the history of the plant we find it to be a perennial of which only the roots are used. If we had an abundant supply of good seed with which to begin tomorrow, we could not under these conditions expect to harvest a crop at the end of the present season.

Concerning henbane it is only to be regretted that the United States is not now prepared to produce its own supply of this valuable drug. It is not, however, and the few individuals who have been attempting to grow it should not be discouraged when the government which is at present leading the movement in drug plant cultivation, has almost failed in its attempt to grow the plant. Good seed of henbane is difficult to obtain and I would not advise any one to depend upon those which have not first been thoroughly tested. I have isolated an annual strain, the seed of which germinates quickly and uniformly. Several hundred plants of this strain will be grown this year. This should be a sufficiently large number of plants to test the strain for commercial purposes. The official biennial species has been hard to grow to maturity. Once this is accomplished and a good supply of fresh seed obtained the work on this form should progress more rapidly. One of the worst things to contend with in growing henbane, even on a small experimental scale, is the ravage of the potato beetle. It has been almost impossible to protect the plants from this insect even by the use of the most effective poison.

Concluding with stramonium we find that what was said of digitalis will apply in some degree to this form. With the wild plant growing abundantly in the United States, there is some question of the advisability of attempting its cultivation. It is usually supposed that stramonium will grow in spite of itself, but such is not the case and good results could only be expected on rich soil and by the practice of clean cultivation.

This leads us into a discussion of the problems of drug cultivation from a dif-

ferent viewpoint.We have too often heard of the fortunes to be derived from weeds, of the statements that this or that plant will grow and flourish anywhere and we as often wonder upon what type of reasoning such statements are founded. We know that history records but very, very few fortunes as having originated from weeds except probably through their elimination. It is also evident that all plants now known to man, do possess selective properties which enable them to reach their maximum developments only under environmental conditions which are within certain definite limits. The mere fact that a form has been observed growing as a weed is not good evidence that it will behave in a similar manner when introduced into cultivation. In fact, this is not what we desire. If we merely wish to grow them as weeds and thereby realize an abundant profit we had better stop where we are now, for we would likely derive neither weeds nor profit. What is most desired is to grow medicinal plants not as weeds, but as cultivated plants, improved, perfected and developed in the same manner and to the same degree of perfection as already obtains in the case of other economic forms. To merely grow medicinal plants upon a commercial scale is not sufficient. In fact it is very doubtful whether or not most of them can be produced economically unless some form of improvement is followed. We cannot compete with Eu opean producers upon a mere basis of equality. We may be able to compete with them, however, by increasing the quality and yield of the drugs through improvement. This can only be brought about through careful breeding and selection.

The field of research in this respect is almost unlimited and practically untouched. There is hardly a vegetable drug of any importance that does not suggest opportunity and the possibilities for improvement in this line of work. We only need turn to a careful consideration of existing conditions with reference to such drugs as henbane, belladonna, digitalis, stramonium, cannabis, and others for these suggestions. Henbane of disgraceful appearance and low in alkaloidal value is admitted to the United States in order to meet the constant demand for this drug. We have an official description of this drug and a species requirement, but who knows or is able to determine what species are actually included in the crude drug of European origin. From the appearances of many shipments it seems that every species, both plant and animal, which might inhabit the average barnyard has been included in the make-up of this drug. Here is abundant evidence of much needed improvement and it can best be accomplished by the introduction of this plant into cultivation and its subsequent improvement by breeding and selection. The testing of other species of Hyoscyamus may lead to the discovery of a more valuable form, and while Schneider says that the annual form of henbane is not desired medicinally, let us not despair since we find that this annual form has really never been tested thoroughly for its alkaloidal and therapeutic value.

Belladonna is in the same class with henbane, and while the range of species is not so large, still there is the variety lutea, which has so far never been tested. Seeds of this variety were brought to this country by Professor Henry Kraemer and through his kindness we now have this form growing in our experimental grounds. It offers an opportunity for hybridization with the official species Atropa belladonna. Sievers, of the Bureau of Plant Industry, has already shown

what may be expected from consistent selection with the official belladonna. Further work of this nature, but leading to increased yield, together with a better understanding of soil and climatic condition is highly desirable. A similar series of investigations is suggested by the genus Datura. Here, however, the range of species is much greater and the variation in the nature of the alkaloids in the various species is such as to present problems of a different character, and which should lead to the use of some of these species for different specific purposes. The species Datura tatula has recently been shown to be equal to or better than Datura stramonium in the percentage of alkaloids. Both of these species have yielded to selection and hybridization in such a manner as to promise the early development of a much-improved strain. Turning to digitalis, we find a host of species and horticultural varieties of unknown therapeutic value which should furnish an abundance of material for the investigator. Many of these have been found to be extremely toxic, both in the flowering and nonflowering stages.

And so the discussion might be continued in detail for cannabis, conium, colchicum and any others that might be grown within the United States. Sufficient has been said, however, to draw attention to the many difficulties that may be encountered in attempting to grow medicinal plants upon a commercial scale, and of the opportunity and desirability for improvement. The beginner in this work should be advised to commence upon a small, experimental scale with a few of the most valuable drug-producing plants and enlarge his operations as results might indicate. The value of the work cannot be questioned, and while it is vitally important that medicinal plants be grown with the same care and consideration as in the case of corn, wheat or other economic forms, still the step from the wild plant to the highly developed variety of known constitution is a long one and cannot be accomplished in a few days.

It is hoped that nothing has been said which will tend to discourage the present widespread movement in drug cultivation. Rather, we would wish to encourage it but in such a manner as to lead to a fair understanding of the true state of affairs and to dispel the idea that large profits may be expected.

BOTANICAL DEPARTMENT, ELI LILLY & COMPANY, Indianapolis, April 8, 1915.

THREE INTERESTING INCOMPATIBILITIES.*

WILBUR L. SCOVILLE.

The first deals with the action of light and heat on the organic acid salts of the cinchona alkaloids.

In 1853, Pasteur found that on heating acid sulphate of cinchonine to 130° C. for several hours, a poisonous compound was formed which was isomeric with cinchonine. This for many years was regarded as one of the curiosities of cinchonine, possessing no practical interest, because in the use of cinchonine it never became necessary to heat it in this way, and consequently no change was expected. Hesse

* Presented to the Detroit Branch, A. Ph. A., Feb. 19, 1915.

(1868, 1873 and 1875) studied the reaction several times in establishing the constitution of cinchonine, and Howard (1872) and Roques (1895) also studied it.

In 1805, Miller and Rhode found that on heating cinchonine with acetic acid at 100° C. for several hours, a similar compound was formed but which crystallized in a different form. Pasteur had called his product *cinchonicine,* and Miller and Rhode called theirs *cinchotoxin,* but in 1900, Brinner showed that the two substances were identical and that the body crystallizes in two forms.

In 1912, Prof. H. C. Biddle of the University of California, made a study of this reaction at temperatures of 100° C. and also at 36° C. with a view to learning whether this compound was likely to influence the therapeutic action of quinine or the other cinchona alkaloids.

Cinchonicine or cinchotoxin is an isomeric form of cinchonine, one hydroxyl group being changed to a ketone group. This change entirely destroys the febrifuge action of cinchonine and it becomes strongly poisonous. The new body resembles digitoxin in its action, inducing convulsions and death in sufficiently large doses. A similiar change occurs with quinine, but quinicine (or quinotoxin) is not as intense in its action as cinchonicine.

Biddle found that by heating either quinine or cinchonine in the presence of acetic, citric, tartaric, lactic, formic or malic acids, the alkaloids were completely converted to the poisonous isomer in from 24 to 48 hours at 100° C. Half of the conversion, he found, takes place in the first six hours. The change is shown by a darkening of the solution, and a lesser solubility of the product.

The color is a good indication of the change, the depth of color being proportionate to the amount of conversion. With sulphuric and hydrochloric acid there is no conversion, and when these acids are present in excess the change with organic acids is almost entirely prevented.

The change was also studied by Professor Biddle at 36° C,—approximately body temperature. As might be expected, it occurs much more slowly at this temperature, being less than 2% of conversion in 36 hours. But that it occurs at all at this temperature is significant, and stands as a warning for pharmaceutical combinations.

The change is induced by sunlight as well as by heat, and it has been shown that the brown color observed in bottles containing quinine, cinchonine, etc., and their salts, which have been exposed to light during long periods, is due to a small amount of these toxic compounds.

Pharmaceutically the change occurs most frequently in elixirs and syrups containing quinine in combination with iron citrate, such as Elixir of the Phosphates of Iron Quinine and Strychnine, Syrup of Iron Quinine and Strychnine Phosphates, etc.

These, as is well known, tend to darken on storage, especially if exposed to light, and the presence of ferric salts accelerates this action. This darkening is due in part to the change in the quinine by action of the organic acid present and promoted by heat or light. That an elixir or syrup so darkened is not only unsightly, but is also poisonous from the presence of quinotoxin, is the fact to be borne in mind. Doubtless some cases of "idiosyncrasy against quinine" are due to the presence of the isomeric and toxic body.

Such preparations should be stored in amber bottles, and should not be dispensed when a decided darkening has taken place.

Professor Biddle further cautions against the free eating of acid fruits when taking quinine as being liable to form enough of the toxic body to produce unpleasant results.

An interesting instance of the probable quinine combinations which may be made, and which need caution in storing is the following prescription which was recently brought to my attention:

℞ Aspirin.
Quininæ Sulph..... āā ℥ss
M ft. capsul..... xii no.

This prescription was compounded and not called for. At the end of about a year the druggist found that the mixture had liquefied in the capsules, and asked for an explanation. It is probable that a series of reactions had occurred.

First, the water of crystallization in the quinine sulphate may have decomposed the aspirin, liberating salicylic and acetic acids. (The liquid in the capsules had an odor of acetic acid.)

Second, the acetic and salicylic acids converted a part of the quinine, forming quinotoxin, which is a liquid at ordinary temperatures.

Third, the quinotoxin, being a ketonic body, is likely to form an eutectic with salicylic acid, and if this eutectic melts at ordinary temperatures the liquid would thus be further accounted for.

There is some ground for this view, because a mixture of aspirin and quinine sulphate, when heated in a steam bath, soon liquefies and darkens. Quinotoxin is not as dark as cinchotoxin, but forms a brownish-yellow oil which does not crystallize easily. Hence, a slight darkening with quinine means more than with cinchonine. Quinine sulphate with acetic acid does not liquefy, but it does with salicylic acid.

Preparations containing quinine or other cinchona alkaloids, in combination with or in the presence of organic acids, should not be heated nor exposed to a strong light, and if stored for any length of time should be observed carefully. They are safer if a small proportion of free mineral acid is also present. This hinders the change, or may prevent it entirely.

The second incompatibility which I wish to discuss is that of ferric salts on organic acids induced by light.

A few years ago I was called on to explain why Wine of Beef and Iron, containing 20% of alcohol, persisted in fermenting. Sterilization and the presence of antiseptics did not prevent it, but it was noticed that the change, which closely resembled alcoholic fermentation in its physical aspects, and which gave off carbonic dioxide, seemed to be hastened by sunlight. Finally a sample, which showed a considerable pressure when the cork was removed, and which had all the appearance of active fermentation, was proved not only to be sterile itself but to be incapable of growing bacteria or yeasts which were added to it.

Sterile fermentation was certainly something new!

But that it could be anything but fermentation did not occur to me until its sterility was absolutely proved.

About this time abstracts of experiments upon the chemical action of light be-

gan to appear frequently in chemical literature, and this gave the clue to the true cause of decomposition.

Sunlight decomposes many organic compounds, and among the more sensitive are the organic acids, notably citric, tartaric, and lactic acids. This action is accelerated by ferric salts, which are thereby reduced.

Thus Wine of Beef and Iron, whether made from ferric citrate or tincture of citrochloride of iron, contains the iron in the ferric condition and also a citrate. It is furthermore acid in reaction. Hence, in the presence of strong light the iron is gradually reduced to the ferrous condition and the citric acid is completely oxidized to water and carbon dioxide. Like many other reactions, after once started it proceeds more vigorously, and may be energetic enough to burst the bottle.

Amber bottles, of course, inhibit this action. Neither does it occur in the presence of ferrous iron, at least not as vigorously.

In a diffused light the action is slow, yet I have had a bottle of tincture of citrochloride of iron develop considerable pressure while standing on a laboratory shelf where the direct rays from the sun never reached it, in the course of about two years. In direct sunlight this tincture will show an evolution of gas within a few hours.

The iron elixirs, bismuth elixirs, and most liquid ferric preparations are subject to this reaction. They should never be exposed to the direct rays of the sun and are much better preserved in bottles of amber glass.

The third incompatibility deals with combinations with boric acid. You are all doubtless aware of the fact that glycerin will decompose borax and change it from an alkaline to an acid reaction. This has usually been explained as first a combination in which the glycerin unites to form glyceryl borate and liberates sodium metaborate and water, then the water in turn decomposes glyceryl borate and liberates glycerin and boric acid. So the end products have been said to be sodium metaborate, glycerin, boric acid and water.

This reaction was very simple and satisfying—on paper—until in 1911 W. C. Duncan, Ph. C., of Edinburgh, in a paper published in the British Pharmaceutical Journal, pointed out these faults in the reaction. First, that compound esters are not easily formed in the presence of water; second, that such esters are hydrolyzed slowly, not instantaneously, by water; and third, that the liberated acid is much more active chemically than boric acid, for it causes vigorous effervescence with carbonates, whereas boric acid reacts sluggishly with carbonates. He found also that the amount of glycerin necessary to produce an acid reaction is two molecules of glycerin to one of borax, but if a permanent and active acidity is desired four molecules of glycerin must be used for each molecule of borax, or practically an equal weight, and this equation does not balance on the glycerylborate theory.

Mr. Duncan's explanation is that a new acid, glyceroboric acid, is formed which is analogous to glycerophosphoric acid, and is much more active chemically than boric acid.

Mr. Duncan attempted to prove this, but did not succeed in separating the pure substance from its excess of glycerin, and also failed to separate pure salts of lead, barium, calcium and magnesium which he prepared. But he did show that a number of reactions which occur with glycerylboric acid do not occur with ordinary boric acid, and the evidence is strong that the former acid is formed. Simi-

lar combinations occur with sucrose, glucose, and manitol, and with tartaric and citric acids.

Some time ago a complaint was made that an antiseptic tablet containing mercuric chloride, ammonium chloride, tartaric acid and boric acid did not keep well.

Examination showed that the tablets had a marked odor of hydrochloric acid, and subsequent experiments showed that the boric and tartaric acids had combined to form a borotartaric acid which was active enough to decompose ammonium chloride and liberate hydrochloric acid therefrom. Borotartaric acid was a somewhat familiar article in pharmacy fifty years ago, when its chief interest lay in the solubility, which is far greater than boric acid alone. But that the combination was powerful enough to liberate hydrochloric acid from ammonium chloride was not suspected.

Except for antiseptic washes and collyria, borax and boric acid are not prescribed often, but occasional combinations are found in which it is interesting to note that boric acid is not boric acid.

DISCUSSION.

In the discussion which followed, Mr. Mann stated that he had personally experienced very unpleasant results in a recent treatment of a hard cold, which he thought must have been due to taking rhinitis tablets (containing quinine sulphate) and aspirin at short intervals. A rash appeared which could not be accounted for in the normal course of the disease, and which was severe for a short time.

Mr. Seltzer stated that he had known of a number of cases of unpleasant results following the administration of quinine and aspirin in combination, and is now warning his physician-patrons of this incompatibility.

He thought that quinine and aspirin should not be administered together, or in sequence at short intervals.

Another interesting incompatibility which had recently come to his attention was the administration of hexamethylenamine in gelatin capsules. When these were taken into the stomach the gelatin softened and swelled, a small amount of the acid juices penetrated the capsule and started decomposition of the hexamethylenamine and the formaldehyde liberated acted immediately on the gelatin, rendering it insoluble and the capsules failed to dissolve. He cited one instance in which an active cathartic had resulted in a patient voiding a number of such capsules in an insoluble condition.

Mr. Scoville said that this is a particularly interesting case of incompatibility, gelatin being very sensitive to the action of formaldehyde, and such a condition as Mr. Seltzer had described was quite probable. Gelatin treated with formaldehyde has been recommended for enteric coatings, but while such a process was practical under proper conditions and adjustment, there was much danger of overdoing it and obtaining a wholly-insoluble instead of an enteric coating. The recommendation which had recently appeared in drug journals, to immerse gelatin capsules in a 10 percent formaldehyde solution for five minutes, then drying them and using for enteric capsules, should be condemned, because the result will be, not an enteric capsule but an insoluble one. Gelatin is so sensitive to the action of formaldehyde that minute traces show its effects.

The use of formaldehyde is more likely to result in an artificial leather than in an enteric coating.

NEW METHOD OF MAKING SYRUPUS HYPOPHOSPHITUM, U. S. P., AND SYRUPUS HYPOPHOSPHITUM COMPOSITUS, U. S. P.*

F. A. UPSHER SMITH, PH. C.

The pharmacist who wishes to make the official syrups of the hyposphophites encounters the fact that it is necessary to keep on hand five different salts, viz., the hypophosphites of calcium, iron, manganese, potassium and sodium. Even if he has a package of each of these salts it often happens that one or more of them are not on hand in sufficient quantity, or that the hypophosphites of potassium or sodium have deliquesced beyond the possibility of weighing them.

When I was with Noyes Bros. & Cutler, it occurred to me that a formula might be devised for making such syrups by taking advantage of the fact that these hypophosphites are all readily made from the calcium hypophosphite. This conjecture proved to be correct, and I obtained permission from Mr. C. R. Noyes to publish the formula.

In explanation of the process, let me remind you that when a solution of calcium hypophosphite is mixed with a solution of sodium sulphate in equimolecular proportions, these salts interact with formation of sodium hypophosphite, which remains in solution, and calcium sulphate, which settles as a white precipitate, insoluble in the liquid. If we take in this way a solution containing potassium sulphate, manganese sulphate, sodium sulphate and iron tersulphate, and add it to a solution of calcium hypophosphite, the resulting solution will contain the hypophosphites of potassium, manganese, sodium and (ferric) iron, while the precipitate of calcium sulphate is separated by filtration.

An excess of calcium hypophosphite is added to be retained in solution as such, according to the dosage of calcium hypophosphite required by the formula, and a further excess of calcium hypophosphite is added for the purpose of producing the correct amount of hypophosphorous acid, by decomposition with a carefully calculated equivalent quantity of sulphuric acid. The resulting solution is rendered stable by acidifying it in this most natural way with the free hypophosphorous acid so formed.

The formula which I have calculated out along these lines for *Syrupus Hypophosphitum Compositus, U. S. P.*, reads as follows:

Calcium Hypophosphite	67.80 gms.
Hot Distilled Water	400.00 cc.
Diluted Sulphuric Acid, U. S. P.	2.20 cc.

Dissolve and add the following solution:

Potassium Sulphate	14.65 gms.
Sodium Sulphate	26.58 gms.
Solution of Ferric Sulphate	3.38 cc.
Manganese Sulphate	2.40 gms.
Hot Distilled Water	150.00 cc.

When mixed add a solution of:

Sodium Citrate	3.75 gms.
Hot Distilled Water	5.00 cc.

* Read before the Minnesota State Pharmaceutial Association.

Let stand over night, filter, then add:

Quinine Alkaloid	1.100 gms.
Strychnine Alkaloid	0.115 gms.

When dissolved, add:

Sugar	715.00 gms.
Distilled Water, q. s. to	1000.00 cc.

Dissolve sugar in cold water, strain through cotton and add water q. s. Keep in amber bottles.

A sample of the first batch of the syrup made from this formula, dated January 9, 1913, is here for your inspection, in the original bottle in which it was placed. You will notice that it is perfectly bright and clear, with an attractive yellow color. (Sample was exhibited by author at meeting.)

A few weeks ago I constructed a formula for making *Syrupus Hypophosphitum, U. S. P.*, along similar lines, and am using the formula in my store:

Calcium Hypophosphite	70. gms.
Hot Distilled Water	450. cc.

Dissolve and add:

Diluted Sulphuric Acid, U. S. P.	1.50 cc.

When mixed, rub in a mortar with

Potassium Sulphate	12.50 gms.
Sodium Sulphate, dried	10.00 gms.

Let stand over night, filter, and in the filtrate dissolve, in the cold:

Sugar	650.00 gms.

Previously mixed with:

Tincture of fresh Lemon Peel	5.00 cc.

Finally strain through cotton and add:

Distilled Water, q. s. to	1000.00 cc.

Keep in amber bottles.

Although at first glance these formulas may appear to be more complex than those of the U. S. P., yet in practice they are easily worked, and they present the great advantage that the pharmacist needs to carry in stock for making these syrups only one hypophosphite, viz., calcium hypophosphite, which is the most stable, the most reliable and by far the cheapest of the hypophosphites. Without any preliminary practice, I am confident that you will be able to make your stocks of these two syrups by the litre or by the barrel, with satisfaction to yourselves, the physician and the patient.

IDEALS IN PHARMACY.*

THEODORE J. BRADLEY, DEAN OF THE MASSACHUSETTS COLLEGE OF PHARMACY.

As this is the day on which you receive your degrees and commence to be graduates in pharmacy it is an appropriate time for you to consider your future course, and I wish to call your attention to some of the conditions that confront the pharmacist today, and have you consider with me certain of the principles that should be adopted and followed by every pharmacist who is to achieve a success that shall be permanently satisfactory to himself.

* An address given at the 1915 Commencement Exercises of the Albany College of Pharmacy.

You have chosen one of the oldest of the professions and one that has undergone many changes. In ancient times and during the dark ages medicine and pharmacy were practiced as one profession and such crude surgical work as was attempted was done largely by barbers. The successive periods in the development of mankind from utter savagery are generally designated by the materials from which our utensils and weapons have been made, as the stone age, the bronze age and the iron age, in the last of which the people that we say are civilized are now living. This present period could very well be sub-divided according to the sources of our medicines. In olden times parts of animals were used, empirically and often superstitiously, then herbs or simples and teas, then various mineral substances, followed by the tinctures and extracts of the early nineteenth century, these in turn largely displaced by the alkaloids and other active principles of plants and by various mineral drugs. Very recently we have made large use of synthetic compounds from coal-tar and similar sources, and, finally, we are entering a period characterized by the use of serums, antitoxins, animal extracts and similar products. Of course these periods are of varying length and overlap each other, and the most valuable drugs of former periods have been retained and probably will be for an indefinite time.

Each of the periods mentioned has been marked by an advance in medical knowledge and this has frequently made it necessary for the pharmacist to adapt himself to changing conditions governing the practice of his profession. At no time in the past have conditions changed more rapidly than they are changing now, and, when I hear a pharmacist complain of his profession, I wonder if the profession is to blame or his own lack of the adaptability necessary to adjust himself to changing conditions. Such complaints are frequently heard and many men oppose the changes, often to their own undoing.

The pharmacist is both a business man and a professional one, in about equal measure, and the general public's recognition that our calling has a professional aspect is one of our most precious possessions and we should do all we can to increase our standing as professional men. In continental Europe the practice of pharmacy is so restricted that there is no likelihood that the pharmacist will lose his professional standing, but in America and Great Britain there has been, recently, a large development of the commercial side of pharmacy, and we are in great danger of becoming mere buyers and sellers of goods. In fact many pharmacists seem anxious to exchange their birthright of recognition as professional men for a mess of pottage in the form of what is termed commercialism. The ideal pharmacist is the one who has retained his professional standing and used it to aid him in achieving commercial success. If we are to continue to be more than merely tradesmen it is necessary for pharmacists to realize this present danger and to overcome it by living up to the ideals of their profession. There is no incompatibility between professionalism and commercialism in pharmacy if they are developed side by side, each in its proper proportion and not at the expense of the other. It is difficult to control this matter by law in this country because of the great American principle of the liberty of the individual, but various attempts are being made to formulate laws to this end and we watch their progress with interest. It is obvious that a man cannot become a successful pharmacist unless he is a good business man, but neither can he become a success-

ful pharmacist unless he is a pharmacist. It may be that reasonable and equitable laws can be secured that will recognize that the practice of pharmacy is as personal as the practice of medicine, or law, or any other profession, and that such practice and the proprietorship of drug stores should be restricted to registered pharmacists. But pharmacists cannot expect the benefits of such laws unless they continue to show that they are professional men with professional ideals.

The frequently enacted special laws regulating adulteration, the sale of alcoholic liquors, the sale of poisons, and similar matters, put on the well-meaning pharmacist a burden that he must bear because pharmacy has in its ranks some men who are a discredit to the profession. All physicians and all lawyers suffer in the same way from the misdeeds of a few quacks and shysters. Many of these laws are proposed by men who see a real or imaginary evil to be remedied, but who know little or nothing about pharmacy or medicine. In dealing with these proposed laws the pharmaceutical associations show their value. These organizations are generally able to prevent the enactment of foolish and harmful laws and to secure the modification of objectionable parts of necessary laws, so that they do not oppress the pharmacist who knows his work and is trying to do right. As an example of this value of the associations may be cited their work on the national anti-narcotic law which has recently become effective. All who had any knowledge of the growing use of habit-forming drugs realized that strict regulation and control of their sale were necessary, but the first bills brought before Congress included many regulations that were impossible of enforcement and which would have worked great hardships on pharmacists and physicians. The national pharmaceutical organizations, including those of the retailers, wholesalers and manufacturers, promptly formed a joint committee which met several times at Washington and was able to show the unreasonableness and impracticability of the objectionable sections so conclusively that the bills were amended and combined and finally passed in a workable form. This beneficial influence on legislation constitutes only one of the reasons why every pharmacist should be a member not only of his local and state associations, but of both national pharmaceutical associations as well. They deserve and need his support and he receives a great deal in return for the moderate yearly cost of membership. The resultant contact with the leaders in his profession, which is enjoyed in these organizations, helps to broaden and develop a man as nothing else can do.

Besides these questions and others of general interest to pharmacists, there are some of just as great importance, but which are of personal and individual application.

During the past two years you have rapidly developed, and largely increased your knowledge or you wouldn't be here today. It is now necessary for you to decide whether or not you are to continue this development, and progress, or stop it, and retrogress. The New York State pharmacy law requires that a pharmacist shall have a minimum education of a general and a special nature. Education informs and develops the mind and the studies pursued in a pharmacy course do these things in about equal measure. What they lack is the cultural value possessed by the languages and history, which is of great benefit in the polish it gives to great minds, but is likely to lead to intellectual snobbery in little minds. Appreciate your education and build upon it, but do not misap-

prehend its value. After we have acquired the most elementary subjects, the value of our education is shown by what we can understand and do, rather than what we remember. You have learned much of the theory and practice that are essential to the trained pharmacist, but this knowledge forms no more than a set of tools with which you are to fashion your careers. If you have studied with no worthier motive than merely to pass your examinations and graduate, and with no real interest in the subjects themselves, and if the faculty has done no more than to teach you a mass of facts, more or less scientifically classified, you and they have failed in your work together. Your course has been successful, only if they have helped you to develop your powers so that you can understand and interpret facts and theories, think for yourselves and work independently. This day is only one of the prominent milestones in your journey through life. You must pass others, but you will not travel far if you know only what has been learned from teachers and can work only under supervision. Each of us has two kinds of education, one that is received from teachers and one that we give ourselves. We receive no diplomas from the courses we give ourselves, but they count heavily in the casting up of our lives' achievements.

A tendency that every one should guard against is the narrowness that is likely to follow close application to one kind of work. One of the chief features of our modern industrial organizations is specialization in work. If such specialization leads to thoroughness it is fine, but if it leads to narrowness also, it is vile. We no longer commission a shoemaker to shape a pair of shoes to our individual measure and expect that he is to do all of the work on them himself, but we buy a ready-made pair that is exactly like many others that have been turned out in a factory where dozens, perhaps hundreds, of men and women have each contributed a small bit of work to them. This modern method leads to economy and uniformity and style, but not always to quality, and never to versatility in the workmen. We are becoming so dependent upon each other that there may be a seriously bad effect upon the race after a few more generations. Perhaps this danger from specialization in work is not near to pharmacists, but, nevertheless the tendency to specialize is here. In the larger stores we now hire prescriptionists, store clerks, soda clerks, porters and others for special lines of work, so that the drug store boy, who did all of these things in turn and as a part of his apprenticeship, is fast disappearing. The clerks have an easier time now and are undoubtedly more comfortable in their work, and probably this is a real improvement in conditions, but we should not allow this tendency to specialize to dominate our own work unless we have already mastered all of the tasks of the modern drug store.

Every pharmacist should cultivate the habit of reading several of the drug journals and occasionally he should buy a new book on pharmacy or one of the related subjects and read that also. This will keep alive his interest in these subjects and inform him on new developments. Antitoxins and biological products do not yet receive much attention in the pharmacy curriculum, but pharmacists should be informed on them and I commend to you, for immediate post-graduate study, a course of reading on these new products.

One of the most satisfactory and profitable assets a pharmacist can have is a reputation as a scientific worker. I have in mind one man who has a drug store

in a city with fifteen thousand inhabitants. Some years ago, after graduating in pharmacy, he did some advanced work in bacteriology and used that and his knowledge of chemistry in working up a practice in clinical testing for the physicians of his city. He was soon appointed city chemist and bacteriologist, at a moderate salary for a small amount of work, but the prestige derived from this position has secured the best trade of the city for his store and his customers are willing to pay advanced prices because of the confidence they have in his products. All of us cannot do just as this man has done, but we can find similar opportunities if we look for them.

After securing the proper training it is necessary that we believe in ourselves. Opportunities constantly present themselves to us. We may have the training which prepares us to profit by them but we need also backbone enough to embrace them. Not long ago the college with which I am now connected was asked to recommend a man to take charge of the pharmacy department in a state university, a position that is attractive in all ways. The university is located in a beautiful town, the salary to start with was $1500 for nine months' work, and there was a great opportunity for the right man to build up a strong department. After considering the matter we suggested two men, both of whom appeared to fill the requirements. The first was selected because he was among the honor men in his class, and the other because of his manliness and ability to make friends. The latter was a good student, though not a distinguished one. What happened? The university wrote to both men and the first one refused to consider the position because, as I understand it, he lacked confidence in his ability to fill it. Of course his reason appeared good to him, but I would much rather have had him undertake the work, as I feel sure that he could have done well in it. The other man secured the position and has been markedly successful in the work. He may not be as distinguished a scholar as the first man, but he makes up for this by a good measure of that quality we call gumption.

It is probable that every one who makes his own way in the world wonders, at one time or another, if he would have been more successful in some other calling than the one he chose to follow. Such thoughts are fruitless and unprofitable after we are established in a definite line of work. If we have the essentials for success in our make-up we shall have some measure of success in the work we are doing; lacking these essentials we should not be successful in any other work. This is true of all callings, except those which require natural artistic gifts. We should not allow ourselves to be influenced by some who can see no good in pharmacy as a profession. Every kind of work has its difficulties and we are likely to magnify those in our own path because we are so near them. We should choose to be with those who square their shoulders and overcome their difficulties rather than with those who are themselves overcome.

With all the changes that have affected pharmacy, conditions are better now, both for proprietors and for clerks, than ever before. A boy without any capital may decide to study pharmacy and it is entirely possible for him to earn his living while obtaining the store experience which is an essential part of his preparation. As his experience grows his compensation is increased and he can work for a part of his time while attending a college of pharmacy, earning enough to pay his expenses. When he completes his training and becomes a registered

pharmacist he has his choice of several good-paying positions, and it is not at all difficult for a dependable man to secure a store on a small first payment and then make the store earn the amount necessary to finish paying for itself. How different these conditions are from those governing other professions, like medicine or law. A man who choses either of those professions must complete a college course and spend some time in hospital or law-office with little or no compensation, and then wait for an indefinite period before he can secure a practice sufficient to support him.

But the man who is to succeed must have certain qualities that are only indirectly connected with his education. The faculty has talked to you so much in college courses about the necessity and value of study that I feel that I should now caution you not to over-estimate the importance of knowledge. You have acquired much more than the average amount of education or you wouldn't be here today, but do not for a moment deceive yourselves into believing that a complete man is made by any amount of knowledge. Your happiness and success will come, mainly, from your character and health and common sense and industry. Many great opportunities come to all men who possess a good measure of these qualities in this country of ours. Your superior education only prepares you to profit by these opportunities to an extent far greater than can the poorly-educated man.

You should appreciate the importance of striving to do right at all times. The man who is trying to do right has a weapon that makes him invincible if he but use it. Remember that your acts and achievements are thrown back on the college which trained you. Your credit will be its credit and your shame would be its shame.

This room is filled with your friends; mothers, fathers, sisters, brothers, and, I trust, sweethearts. Each of you is now, or soon will be, able to support a wife, in comfort if not in luxury. I advise you each to find one by all means. If you get the right one you have a help, not a hindrance, and you become immediately a more dependable man. The world will respect you accordingly and the happiest men are those who are well married. A word to the wise is sufficient, so I shall not pursue this topic further.

In this talk I have asked you to keep alive the professional ideals of pharmacy, to support the pharmaceutical organizations, which will return to you much more than you give to them, to continue your personal development and to adopt high standards of conduct for yourselves. In conclusion, I want to add that the best policy that a man can have is to strive to do right because it is right. Be sure that the things you work for are real. Remember that money-making is not the only possible kind of success and don't mistake the glitter of ephemeral pleasures for the solid gold of abiding happiness.

THE ANALYSIS OF DATURA STRAMONIUM LINNÉ.

L. E. SAYRE AND H. V. CADWELL, UNIVERSITY OF KANSAS.

The sudden cessation of foreign chemical manufacture and importation from European countries, notably Germany, has caused considerable discomforture in American chemical and pharmaceutical circles, since many of the common drugs used so generally here are manufactured abroad. A conspicuous example of the rapid rise in price of these drugs was cited in the Public Health Reports.[1] Thymol increased from $2.00 a pound to $15.00 a pound in three months. Many of these drugs are found in great abundance in the common weeds of this country.[2] The European monopoly of the drug trade has existed chiefly on account of the better established factories there, but since the prices have advanced to the present figure, the American manufacturer can well afford to equip his factory to handle the drug trade of this country.

It was with the idea of utilizing the American stramonium for the commercial production of the valuable narcotics of the belladonna series that this analysis was undertaken.

The Datura Stramonium L, commonly called "Jimson Weed," it is well known, grows profusely throughout the United States, Europe and Asia. It has a varying alkaloid-content when uncultivated, which has been found to range between 0.13 percent[3] and 0.62 percent[4], with a general average of about 0.30 percent. With cultivation the alkaloid-content is increased to a considerable degree, Miller and Meader[5] finding an alkaloid-content of from 0.46 percent to 0.55 percent in plants raised in Indianapolis with cultivation.

The sample of leaves for this analysis was gathered from a hog lot at Fox, Kendall County, Illinois, just after the period of the full flower. After drying in an attic they were ground to pass a 100-mesh sieve. The analysis was made according to a modification[6] of Dragendorff's method of plant analysis, such that the first principal steps could be carried out in a Soxhlette extractor and the succeeding determinations could be made on the one sample.

Moisture.—Samples of from 2 to 3 grammes were dried in a Soxhlette drying oven for six hours at 100° C. The oven was equipped so that a rapid current of air was passing through it all through the interval.

Ash.—The ash determinations were run on samples of about two grammes at as low a heat as possible, finishing the oxidation with the addition of a little ammonium nitrate. The ash was then extracted with water and later with dilute hydrochloric acid.

Nitrogen.—The nitrogen was determined by the well-known Gunning modification of the Kjeldahl method, the albuminoids being calculated by the use of the factor 6.33.

Chloroform-Soluble Constituents.—About five grammes of the finely powdered leaves were placed in a Soxhlett extractor, having all glass connections, and extracted for eight hours with pure chloroform. This procedure brought into solution the alkaloids, glucosides, organic acids, chlorophyll, resins, fats, waxes, camphors, fixed oils and volatile oils.

The volatile oils were determined by evaporating the extract to dryness at the lowest possible temperature, then adding about 10 cc. of water and evaporating at 100° C. The difference in weight gives the amount of volatile oils.

The fixed oils were extracted with petroleum ether and determined directly.

The alkaloids, glucosides and organic acids were then extracted with water and determined directly. Qualitative tests for alkaloid with Mayer's reagent gave a pronounced reaction and for glucoside with Fehling's solution only a slight reaction after prolonged boiling with acidulated water.

Camphors, resins and chlorophyll were determined directly by extracting with 80 percent alcohol.

A residue remained, consisting of a green, gummy mass having a strong herbaceous odor.

Constituents Soluble in 80 Percent Alcohol.—The residue from the chloroform extraction was again extracted in the Soxhlett extractor with 80 percent alcohol for eight hours. The extract was then dried and extracted with water and the water extract divided into three portions. One portion was precipitated with copper acetate, another with neutral lead acetate and the third with basic lead acetate. The copper acetate precipitate consisted largely of tannic acid, the neutral lead acetate of tannic acid and some coloring matter and the basic lead acetate of the coloring matter.

Constituents Soluble in Water.—The residue from the alcoholic extraction was macerated in cold water for two days. This procedure brought the gums and pectin bodies into solution.

Constituents Soluble in Dilute Acid.—The residue from the water extraction was boiled for two hours with a 10 percent solution of hydrochloric acid which brought the starches and some albuminoid matter into solution. The extract was neutralized with potassium hydroxide, which precipitated some of the albuminoid matter. The remainder of the solution was boiled with Fehling's solution to determine the percentage of starch through the reducing sugars.

Soluble in Dilute Alkali.—The residue from the acid extraction was boiled for two hours with a two percent potassium hydroxide solution. This solution contained albuminous matter, humus and pectic acid. Hydrochloric acid precipitated a considerable amount of this matter.

Crude Fiber.—The residue from the alkali treatment was oxidized with bromine water and ammonia to remove the insoluble coloring materials from the cellulose.

Cellulose.—The residue from the crude fiber treatment consisted of cellulose and what mineral matter that had escaped extraction in the previous processes. The amount of cellulose was then determined by burning the residue from the mineral matter. The ash left was called the residual ash in the analysis.

The resulting analysis of stramonium was:

Moisture		7.37%
Chloroform soluble		9.71%
Soluble in 80 percent alcohol		17.29%
Soluble in water		9.37%
Soluble in dilute acid		34.24%
Soluble in dilute alkali		15.84%
Crude fiber extract		.54%
Cellulose		4.64%
Residual ash		1.00%
Total		100.00%
Total ash		17.02%
Water soluble ash	58.60%	
Soluble in hydrochloric acid	31.89%	
Residue	9.51%	
Total	100.00%	
Nitrogen as albuminoid matter		6.33%
Alkaloid assay		.28%

Constituents of the chloroform soluble material:

Volatile oils	20.30%
Fixed oils	15.30%
Alkaloids, glucosides and organic acids	25.00%
Camphor, resin and chlorophyll	12.00%
Residue	27.40%
Total	100.00%

Constituents of the 80 percent alcohol portion:

Tannic acids ppt. by copper acetate	18.58%
Tannins ppt. by neutral lead acetate	7.40%
Coloring matter ppt. by basic lead acetate	33.75%
Material not examined	40.28%
Total	100.00%

Constituents of the dilute acid extracts:

Precipitated by KOH	21.75%
Starch	1.45%
Not examined	76.80%
Total	100.00%

Constituents of the dilute alkali extracts:

Precipitated by acid	28.43%
Not precipitated by acid	71.72%
Total	100.00%

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[5] F. A. Miller and J. W. Meader: VIIIth Inter. Cong. App. Chem., Vol. XVI, 57.
[6] Sayre and Havenhill: Outline of Proximate Plant Analysis (in use at the University of Kansas).
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Editorial

E. G. EBERLE, Editor.....63 Clinton Building, Columbus, Ohio

THE EDITORSHIP OF THE JOURNAL.

IT is in order to state that the Committee on Publication has elected the writer Editor of the Journal of the American Pharmaceutical Association, which action has been ratified by the Council. It will be recalled by the members of the Association, that, because of personal illness, Dr. James H. Beal, formerly Editor of the Journal, was compelled to relinquish his duties last summer, to take effect as of September 1, 1914, and that Mr. E. C. Marshall, (formerly Advertising Manager) was made Acting Editor until a successor to Dr. Beal could be chosen.

In accepting the honor conferred, the Editor is mindful of the responsibilities he assumes, but reposes confidence in the helpfulness of his associates, namely, that of all the members of the Association. This is the expectation that gives him courage, judging from their work of the past, which has sustained and built up our organization, also realizing that such purpose can only be to grow into greater, or at least continued, usefulness, in the advancement of pharmacy.

The readers will pardon the presentation of thoughts which are not altogether new. If the individual member of an organization is true to himself, he is true to others, and this applies to our organization, which has always stood for exalted principles, in order to serve mankind and to co-operate intelligently with the medical profession. It is unnecessary, at this time, to refer to the leading lights in pharmacy of the past, for we have equally good and true pharmacists with us now; and while we may point to them as chiefs, we are mindful that they represent constituents. Progress is made possible only by co-operating under leadership, and the application of the best thoughts of yesterday with those of today.

The greatest lack of progress, in the past, in all lines of activity, has been due to lack of co-operation, the majority giving the few too much work to do. Hence, the call that every member should recognize his full duty as a member. Quite naturally some must direct and perform the duties of office, but individual initiative and team-work are necessary for a live organization. If a larger number of members can be persuaded to take a more intensified interest in the work of the Association, then a more substantial growth will be assured. What inducement can be offered to bring this about? The Editor will welcome helpful suggestions, for his ardent desire is that his work will stimulate the growth and development of the Association and all the objects it stands for.

It has been stated that one of the objects of the Journal is to publish the papers presented at the annual meetings, but other contributions furnished during the year will not only be welcome, but are earnestly solicited.

The advertisements in the Journal are a source of revenue to the Association and may be readily augmented if the members will encourage the advertisers by their patronage, evidencing that they take cognizance of those who favor the publication. The advertiser naturally expects results from money expended for

publicity. As a matter of business, therefore, he should be convinced that our advertising medium brings returns. The members of the Association have the opportunity in their hands. Will you help?

Publicity-methods at the present time are far different from those of former years. Now, advertised goods are the dependable kind. The writer's views may differ with those of some of the members, but in his estimation, modern advertising literature is educative, and should have a prominent place in professional magazines.

The work of the Editor is largely to co-ordinate the expressed desires of the members relating to the conduct of the Journal and the Association, perhaps to offer suggestions and ideas for development. He speaks only as an individual, though his efforts are assumed to present the views of many. He can be helpful, and much depends upon the efficiency of his services, but he must have inspiration from the co-operation given him by the members. The Journal belongs to the Association, and each and every member of it shares, not only in the advantages gained from the Journal, but also, in the responsibilities of ownership. We represent a working force in pharmacy, the utility of which is dependent upon our individual efforts or neglect. All members have influence, every day's membership affects the organization for good or ill; its purposes are advanced by staunch support, retarded by inaction and injured by discord.

In assuming the duties of the office, the Editor desires to touch elbows with his fellow-members, be a good listener, and do his utmost to maintain the high standard of usefulness established by Dr. James H. Beal for the Journal, so that it may contribute to the upbuilding of the American Pharmaceutical Association, aid in enlarging its opportunities, give thought and assistance to those things which should be preserved, and advance the usefulness of pharmacy in its best estate.

I desire, in conclusion, to express my grateful and sincere thanks for the high honor conferred on me by my election, and express the hope that my work will merit your approbation. My greeting implies action; now let us work together, "one for all and all for one." E. G. EBERLE.

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THE EDUCATION OF THE MODERN PHARMACY STUDENT.

THE difficulties that obtain in the teaching of pharmacy students are accentuated by the changing character of the drug business. The business has developed both along professional and commercial lines and doubtless this will continue. Those who are desirous for purely professional pharmacies, in this country, look in vain for indicative signs to encourage them; everyone must admit that the trading element in pharmacy is becoming more ostentatious, year by year. Whether we lament or rejoice, we must recognize conditions.

So far as definite records go, the apothecary kept open shop—inviting patrons, not only to have medicines prepared, but also to make purchase of perfume, spice and whatever articles that were seemingly compatible with the drug stock of the times. At the present, the so-called side-lines have an important place in every store, whether the owner is a studious pharmacist or stresses the importance of increasing the volume of sales. The complement to conducting a store is selling

something, hence merchandizing in a drug store is a sequence; the pharmacist renders professional service.

The object of these introductory remarks is not to discuss whether a pharmacist should be a tradesman or not, but to present an aspect of the inherent conditions of the drug business with the view of developing a line of thought relative to the chosen subject.

The apprentice system is no longer in vogue and most of the young men find employment in a drug store without the expectancy of continuing therein. They do not choose to follow pharmacy as a profession, but simply as a means of earning money, and continuing for several years, they realize that in order to receive more wages, they must qualify as pharmacists and thereafter attend a school of pharmacy. In reality they have not selected their vocation—they have grown up to it, fallen into it by accident, been thrust into it by others, or by the pressure of need. Here is the difficulty that is presented for the proper training and education of pharmacists, and here also we have the young men who will shape the pharmacy of a later day.

This is not said in any carping spirit, nor as suggesting that the pharmacists of this country are less efficient than those of Europe, but simply to point out that these young men can be directed in the course which will develop pharmacy along lines we have in contemplation. Are we satisfied with conditions as they exist, or not? Bend the twig accordingly.

The revolutionary changes from hand to machine work have affected pharmacy, so have also the exclusion of many medicinal preparations, the introduction of manufactured remedial agents and the decreased prescription of medicines, all of which have developed the need of vocational training to match these changes. And in the absence of such preparation, the drug business has been unduly commercially developed.

Educators in pharmacy must become expert students of conditions as they actually exist, not continue to follow a syllabus that conformed to the conditions of pharmacy twenty-five years ago. They must be students in the science and art of pharmacy, and they must also be students of life, of progress, of conditions, whether this conforms to their ideals or not. They must, if possible, point out the way to success in the vocation for which they prepare the students in their charge.

While the custom of teaching by subjects must be retained, their relative values should be determined and co-ordinated—with direction to the one grand object of practical application. An education in pharmacy means not only the assimilation of the essential knowledge in order to properly apply it, but also, a wide acquaintance with the possibilities of pharmacy. The kind of learning pharmacists usually need is that which enables them to fight for a living. Every avenue that may be opened to the student of pharmacy, should be pointed out to him, so that if desirable, he may specialize, or add a line of related work that will bring him remuneration and reflect credit. The wonderful development in motion pictures suggests the possibilities of bringing the activities of manufacturing industries to the attention of the students. By this means, also, the life and growth of plants may better be shown than explained, and in connection with the drug gar-

dens that are being established, will contribute much lasting and available knowledge.

In later years educational methods have been shifting toward the sympathetic understanding of the *individual* and building up of the inner life. The same progressive thought must obtain in educating and creating pharmacists; whatever we desire them to be, is one of our problems. Life is largely what we make it, and so with our activities, although they are influenced by environments. We must come to a more definite understanding regarding this important matter, so that there shall be better and more constructive work.

The higher entrance requirements in schools of pharmacy are said to have reduced the number of available pharmacists and increased their wage, thus reducing the net profit derivable from conducting a drug business. There are other economic conditions, also, which have made the business of the small dealers less remunerative. All of this must be admitted, but nevertheless, we must have some fixed ideas by which the progress of pharmacy must be directed, or it will be built-up like the house to which additions are made, without regard for symmetry. This was at least one of the reasons for the construction of the Pharmaceutical Syllabus. A lack of understanding as to what should really be required is evidenced at times by Board of Pharmacy questions. Those of the several branches should be synthetical and have as a purpose, the analysis of the qualifications of the candidates.

The idea that the public school system is a sort of procrustean bed to which all children must be fitted without regard to individual differences, is being displaced by the more rational and progressive one of looking forward to the adaptation of the pupil for life's activities. In the furtherance of such plans, pupils should have an opportunity of knowing what the service in pharmacy means and what it requires. This will enable them to have a voice in the choosing of their vocation; an occupation, if distasteful, dooms the individual to a life of discouragement and disappointment, while if the votary loves his work, it will not only mould his character, and develop his ability, but will help in shaping the destiny of his chosen profession.

E. G. EBERLE.

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THE SAN FRANCISCO MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

THE time for the next annual convention of the American Pharmaceutical Association is rapidly approaching and the chairmen of the various sections are arranging their programs. Papers should be in their hands somewhat earlier than usual, as some members contemplate visiting the Exposition before the meeting and making side trips on their return journey.

Chairman H. P. Hynson, with whom are associated Messrs. F. H. Freericks, Joseph L. Lemberger, W. C. Anderson and F. M. Apple, were appointed on a committee "to investigate the House of Delegates and see if its usefulness could not be improved." A letter has been issued and was printed in the April number of the Journal, setting forth in a general way the value of this body, not only to the American Pharmaceutical Association, but to State and other organizations,

and we invite your careful consideration and afterward your suggestions, to be communicated to Chairman Hynson.

With all the possibilities of the American Pharmaceutical Association nothing will be accomplished unless the members co-operate. This is the secret of all success in association work; the conventions are always enjoyable, but not the main object. An important change has been made this year by convening the American Conference of Pharmaceutical Faculties and National Association of Boards of Pharmacy during the latter part of the week, preceding the annual meeting of the American Pharmaceutical Association.

We hope to have a list of all committees in the present number. From now until the meeting every possible effort should be put forth to increase our membership, one new application from each member would double the strength of the Association for doing good. Will you not resolve that your name be attached to one application before the next issue?

It is hardly necessary to say much of the trip involved in going to San Francisco, the opportunities for education and enjoyment are only circumscribed by the contents of your purse. The readers have doubtless informed themselves regarding the Exposition and therefore comment is needless; suffice it to say, San Francisco has made good her promises. The druggists of California anticipate entertaining the largest number ever in attendance at a convention of the American Pharmaceutical Association. Prepare for a profitable meeting, an enjoyable occasion, and the greatest sight-seeing tour of your life. E. G. EBERLE.

The Hotel Bellevue has been selected as headquarters for the San Francisco meeting.

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PHARMACY AND THE PUBLIC.

THE newspapers often take a fling at pharmacists and included statements go by unchallenged. As a result the public has an entire misconception of the services rendered by pharmacists to humanity. On the other hand, we are neglectful in not seeking to obtain full credit, when the work of pharmacists is reported in the daily press. At the present time, pharmacy is really a great factor in many industrial lines.

The Journal of Industrial and Engineering Chemistry for April, 1915, in an editorial, makes it very plain that the public has not been informed relative to the vast and varied field of professional activity of the chemist, even ascribing the public sources of relative information to the signs displayed on the corner drug stores. The writer recites that chemists have received less public acknowledgement than the workers of any other profession and recognizes the publicity which has been given recently to the coal-tar dye industries and the public acknowledgement of the chemists' responsible connection with this important industry, as a great accomplishment.

That the editor is well pleased with the publicity given is clearly evident when he states that "it matters little whether the chemical profession comes into view riding the spectacular coal-tar hobby, whether it is 'trimmed' by the public press for its lack of initiative in seizing opportunities, or whether it is charged with an

utter absence of business acumen, so long as it comes to be publicly recognized as an important and as an essential factor in the industrial development and councils of this country."

We abstract further, "if the newspapers make mistakes in discussing our intricate scientific and industrial problems, we should not be content to blink and chuckle in our superior wisdom, but should come out in the open and set them right. If legislative styles point unmistakably to pension log-rolling, bureaucratic log-rolling, tariff log-rolling, it is our duty to teach legislators the value of rolling the logs that will develop the industries which support our profession."

We have thus quoted at length, because what is stated in that editorial might easily be shaped and made applicable to pharmaceutical activities, and also because of the very close existing relations, or perhaps better, because their industries are mutually dependent.

There is need for closer co-operation between industry, science and finance in the United States. When industry and science do not work together, industry is often handicapped by out-of-date and wasteful processes, conversely science has not the opportunity for research. German success must largely be ascribed to a more general and efficient organization supported by a superior educational system; their boast having been that within ten years there would be no such thing in the German Empire as an untrained workman, from the chimney sweep to the high-grade artisan. Liebig, Woehler, etc., founded schools which were later subsidized by Germany and brought into co-operation with her chemical industries.

We must adopt some of the German methods, if we desire to take advantage of the opportunities now before us; there must be co-operation between science, industry and finance. Financiers will profit by promoting industries; the latter will be made more productive through research work in the schools and laboratories; contact with the industries will stimulate the students, pointing out to them leads for research subjects, and professors will be turned from their accustomed system of teaching to methods that will be more practical, even though not as pleasingly ideal.

E. G. EBERLE.

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STATE ASSOCIATION MEETINGS.

THE American Pharmaceutical Association extends to all State Associations best wishes for successful and profitable meetings.

During the past year much has transpired that has affected the drug business adversely, more particularly through the unsettled conditions of the market, influenced by the war in Europe. To such an extent was the commerce of the United States involved that it became necessary to impose a stamp tax, and as usual many articles sold by druggists were designated as a source for such revenue.

Later the Harrison bill was enacted and again druggists were troubled for a time, feeling that a misinterpretation of the law might bring them trouble. Thus far the Revenue Department has given every aid possible and shown fairness. There have been a number of convictions, but these seem to have been deserved. What the inspectors will do, when there have been unintentional violations, remains to be seen. From the very fact that druggists labored for this law and as

a class have signified obedience, it would seem that fair and proper consideration should be given them.

In many states the legislatures have failed to enact laws complying with the National Act. In this issue will be printed a bill prepared by Messrs. J. H. Beal, F. H. Freericks and Hugh Craig, at the request of the National Association of Retail Druggists. This committee is desirous of having comment thereon from State Associations and they will present the same for discussion at the meeting of the American Pharmaceutical Association in San Francisco. In our opinion the committee has been eminently successful in the construction of the bill and your endorsement after careful consideration is expected.

It is hoped that the various State Associations will express their opinion anent the possibilities of the House of Delegates of the A. Ph. A., in bringing about a closer relation with the parent organization. Each state is entitled to a representation of three delegates from their association, and such selection should not be overlooked.

We may congratulate ourselves that there are evidences of returning prosperity. Our greatly increased exports have, in the first nine months of the Government's fiscal year, produced a favorable trade balance of 700 million dollars. If such a condition existed at any other time than during the present European war, it would bring about an unprecedented boom to business.

In again wishing to each association large and successful meetings, an invitation is extended to all their membership to meet with the American Pharmaceutical Association in San Francisco, during the week of August 9-14, 1915.

E. G. E.

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THE MODEL STATE NARCOTIC LAW.

IN this issue under "The Pharmacist and the Law" we have printed in full a bill prepared by Messrs. J. H. Beal, F. H. Freericks and Hugh Craig for a Model State Narcotic Law. The work was done at the request of the National Association of Retail Druggists and is deserving of thankful recognition by pharmacists throughout the United States.

There may be a difference of opinion as to whether a State law is necessary, complying with that enacted by Congress. This has nothing whatever to do with the duty that was assigned the committee and which they so conscientiously and efficiently performed. The bill, in our opinion, is a most complete and satisfactory draft and avoids adding even the least additional burden upon the several branches of the legitimate drug trade.

We invite a careful reading of the bill and if members have suggestions to offer, they will be welcomed by the Chairman of the Section on Education and Legislation, where discussion of the bill has a place on the program.

If a State provision is necessary, then compliance with the Harrison law is essential so as not to subject druggists to further burdens. It should be emphasized that the work of the Committee is deserving of unstinted praise for the efficient manner it was performed, and every encouragement should be extended to accomplish the purpose of the request made of them. Let us never be derelict in acknowledging services faithfully performed. E. G. EBERLE.

SOME OBSERVATIONS ON THE BRITISH PHARMACOPŒIA, 1914.*

(Fifth Revision.)

IRWIN A. BECKER, MICHAEL REESE HOSPITAL.

To learn the purposes of and the reasons for any book, one consults its preface, as it is here authors "state their case." By doing so, one avoids making undeserved and ill-considered criticisms.

In this instance, careful reading of the preface is quite essential for the proper understanding of the subject. Here one will find that certain deviations are permitted, and inclusions made, to broaden the scope of the book to better serve the whole empire.

The "histological characters of the parts of plants officially recognized are fully described whenever the information is important;" so also of drug powders, where "by chemical testing alone the identity of the article in question could not be certainly determined."

Thus omitting non-essential or the more technical details wherever it was deemed permissible. "Words in the text" referring to articles, reagents, and processes defined or described in an appendix, are printed in italics, thus emphasizing their importance and facilitating reference.

We are informed that "the English titles are not, as a rule, literal translations of the Latin titles." Again that the list of abbreviations in the index, in the interest of international uniformity, is in response to a suggestion of Dr. Remington, chairman of the U. S. P. convention, and that the list probably will be found useful to those in foreign countries, who have to interpret the abbreviations of British practitioners.

Because the ℥ symbol is used to represent 60 grains as well as one fluid drachm, and the ℨ symbol is used to represent sometimes 480 grains, sometimes 437.5 grains, as well as one fluid ounce, and are liable to be misread, "it is recommended that prescribers should cease to employ them."

Other features are the use of the centigrade thermometric scale, and metric weights and measures only, in stating temperature and quantities.

Doses are stated in both the metric and the imperial systems, with only approximate equivalence intended. The term millilitre is used instead of cubic centimetre, being shorter, and in better conformity with the metric notation.

In stating doses of fluids, the contraction "mil," and its compounds "decimil" and "centimil" are used—a decided improvement on our present method.

For "metric measures" and "volumetric vessels" the standard temperature is 15.5° C. (60° F.), however, for purposes for which the imperial system is used, vessels are "recognized" which have been graduated at 16.7° C. (62° F.).

The terms "water-bath" and "steam-bath" are specifically defined.

The atomic weights adopted are the 1914 values of the International Committee on Atomic Weights, on the basis of Oxygen=16.

In quantitative testing, proportional amounts of those stated, are permitted.

* Read before Chicago Branch, April 27, 1915.

The last sentence of this paragraph seems like an official recognition of professionalism in British pharmacy, and a compliment to British pharmacists, and reads as follows:

"In short, the details of procedure in these and other chemical operations are now left to the skill and judgment of pharmacists and of analysts who are assumed to be fully trained."

Considering the several monographs, the grouping of the various reactions and tests, and the descriptions of general processes in the appendix has resulted in a great saving of space, producing a smaller book than the present U. S. P.

The simple and direct manner of statement adds definiteness and brevity, for example, Hydrochloric Acid is defined as "a liquid containing 31.79 percent, by weight, of hydrogen chloride, HCl, and 68.21 percent, by weight, of water. And under "Characters and Tests" we find: "Lead limit 10 parts per million. Arsenic limit 5 parts per million." Both statements short and to the point.

"Alumen Purificatum," may be either potassium or ammonia alum. "Amylum" includes corn, rice, and wheat starch.

Under "Acidum Acetylsalicylicum" the test for absence of salicylic acid reads as follows: "When 0.5 gramme is shaken with 20 millilitres of water and 1 drop of T. solution of ferric chloride is added, no violet coloration is produced." Prolonged shaking may sufficiently decompose a sample to give a positive reaction; also allowing the test to stand several hours gives a positive result, thus showing the need of time-limits on certain procedures and tests.

Under "Apomorphinæ Hydrochloridum" the following warning serves the busy pharmacist well: "The solutions decompose on boiling or keeping, with production of a green colour; but remain unchanged for a considerable time if acidified with a trace of hydrochloric acid."

There is a lack of uniformity in the titles of the bismuth salts: "Bismuthi Carbonas" is Bismuth Oxycarbonate, synonym B. subcarbonate; "Bismuthi Salicylas" is B. salicylate, and in the definition named oxysalicylate; "Bismuthi Subnitras" is B. oxynitrate, without the synonym "Subnitrate." Chemical formulas are provided for these salts, thereby suggesting definite and uniform composition, which, however, will not likely be the case.

Cantharidin and its preparations replace Cantharides and preparations, assuring more certain medication.

Infusion Digitalis contains only 7 gm. drug per litre, less than half the U. S. P. strength. Hypodermic injection solutions of few drugs are provided. These are prone to fungus growths, and the use of tablets affords, more readily a closer approach to asepsis.

Formulas for several ophthalmic discs are included.

"Liquor Ammoniæ Fortis" is 32.5 percent by weight, of NH_3, 28 percent being the U. S. P. strength.

The ammonia waters, lime water, witch hazel, and hydrogen peroxide are classed as liquors. "Liquor Cresolis Saponatus" is made with castor oil.

"Oleum Phosphoratum" differs slightly from the N. F. preparation.

"Opium" contains somewhat less morphine than the U. S. P. standard requires.

A number of inclusions and omissions may seem odd to us: Codeine alkaloid and phosphate are included, the sulphate omitted; morphine acetate, hydro-

chloride and tartrate included, the alkaloid and sulphate omitted; strychnine alkaloid and hydrochloride included, the nitrate and sulphate omitted; quinine alkaloid is omitted; pilocarpine nitrate only is official; "Potassa Caustica," potassium hydroxide, is included, sodium hydroxide omitted.

"Sodium Acid Phosphate" is a valuable inclusion.

"Spiritus Rectificatus," alcohol, is 90 percent by volume—the U. S. P. alcohol being 94.9 percent.

There are four diluted alcohols official, namely, 70, 60, 45, and 20 percent, respectively.

"Tinctura Iodi Fortis" is 10 percent, "Tinctura Iodi Mitis" is 2.5 percent. "Unguentum Hydrargyri" contains 30 percent mercury, conforming in strength to the International Agreement. "Unguentum Hydrargyri Ammoniati" is 5 percent, a more commonly used strength. There are 43 ointments in the B. P., the U. S. P. containing only 24. "Benzoinated Suet" replaces benzoinated lard for ointments made in India.

There is a tendency of having opium in disguise in a number of preparations, examples of which are: "Compound Pill of Soap," "Compound Powder of Ipecacuanha"—"Dover's Powder," "Compound Powder of Kino," "Compound Lead Suppositories," and "Compound Tincture of Camphor"—Paregoric.

A number of "coined" names are among the official titles, such as "Barbitone" for diethylbarbituric acid—Veronal, "Benzamine Lactate" for beta-eucaine lactate, "Diamorphine Hydrochloride" for di-acetyl morphine hydrochloride. "Hexamine" for hexamethylenetetramine, "Phenacetinum" for para-acet-phenetidin, "Salol" for phenyl salicylate, "Sulphonal" for diethylsulphone-dimethylmethane, "Methylsulphonal" for diethyl-sulphone-methyl-ethyl-methane.

Some of these names are new, others familiar; taken as a whole, perhaps better than former attempts.

There is a stated limit of error for Alkaloidal Assays, within which preparations must be brought in their final adjustment.

These are some of the things noted in a more or less careful inspection of the book, with a very limited working knowledge of the formulas.

A PLAN FOR A MORE SERVICEABLE A. PH. A. JOURNAL.*

R. P. FISCHELIS, B. S., PHAR. D.

It has been apparent to many members of the American Pharmaceutical Association for some time that the "Journal" of the Association is not giving as satisfactory service as might have been expected, judging by the contentions of those who advocated discontinuing the issuance of a volume of annual proceedings and substituting therefor a monthly journal. In the editorial outlining the policy of the "Journal" published in the first issue of the latter it was stated that it had been brought "into existence to serve the necessities of the Association," and that, "except for its ability to render this service in more complete manner

* Read before New York Branch, A. Ph. A., March 8, 1915.

and form than can be rendered by other existing agencies, the 'Journal' has no excuse for being."

The purpose of this paper is not to adversely criticise the past or present management of the "Journal," but rather to outline a plan by which it can be made to serve the members of the Association with greater satisfaction.

One must realize that the problem of presenting the entire proceedings of the Association and its local branches, together with the great volume of literature brought before the meetings of these bodies, in twelve monthly installments, is no easy task. But the present limitations of the "Journal" make it an inferior representative of the scope and activities of the American Pharmaceutical Association.

Modern journalism of any type demands that news be presented to the reading public as concisely and expeditiously and yet as fully as possible. Members of the American Pharmaceutical Association who present papers at its meetings or at meetings of its local branches are not permitted, according to the by-laws, to publish these papers elsewhere until they have appeared in the Association's Journal. Such a requirement would be just, if the papers were published within two, three or even six months of the date of presentation, but when a member presents a paper at one meeting of the Association and fails to see it printed in the "Journal" until a full year has elapsed, "it will possess value for only one division of the Association, namely the Section on Historical Pharmacy," and it is questionable whether a member will think it worth his while to contribute future papers of any importance to the Association. Only a very small percentage of the members are in a position to attend the annual meetings and besides, there is never sufficient time to read all of the papers presented, so it is really through the publication that members expect to bring their views before the pharmaceutical public.

It should be the function of the "Journal" to serve the members of the American Pharmaceutical Association in such a way as to at least compare favorably with the publicity obtainable through the balance of the pharmaceutical press.

The proceedings of a convention should be chronicled, as far as possible, in one issue of the "Journal" in order to be of interest to the non-convention-goer.

Few people care a great deal for serial stories spread over a half dozen or more issues of a magazine, and members of the American Pharmaceutical Association are not exceptional in this respect. How many, then, are interested enough to read the entire proceedings of a meeting of the Association when the report of the first session may appear in September and reports of succeeding sessions are not published for two, three or four months following.

Under the present plan the contents of the "Journal" include editorials, proceedings of the general sessions of the Association, council business, legal problems, news items of general interest and the papers presented to the meetings of the sections and branches of the organization, together with their discussion.

The editor is confronted with the rather difficult problem of giving each of these topics sufficient space to properly present it and at the same time make the "Journal" the official record of the proceedings of the Association. Is it any wonder then that some one's paper must be deferred for a year before it can be published and that the proceedings of the annual meeting must be spread over

several issues? There is no fault to be found with the editing, but why should an Association like the American Pharmaceutical Association have such poor publicity facilities? The American Medical Association has found it necessary to make its publication a "weekly" and even then there seems to be no space to spare.

While the American Pharmaceutical Association is big enough, in every sense of the word, to support a weekly journal, it would perhaps seem like too great a leap to take at once, to urge a weekly publication at present.

Conditions are such, however, that one need not hesitate to strongly advocate a semi-monthly publication of the "Journal." If we had two issues each month, the material available could be presented in a manner somewhat as follows: Assuming that the dates of publication would be the first and fifteenth of each month, the issue appearing on the first of each month could contain the editorials, selected articles, local branch, and general news, legal items and reports of council business.

The issue appearing on the fifteenth of each month could then be devoted exclusively to the proceedings of meetings, to the publication of the papers presented at the meetings of the Association and its local branches with discussions, contributed articles, and such special features of scientific or general pharmaceutical interest which the editor and the publication committee may deem worth publishing in this number.

If the annual meeting of the Association were held in August, and this plan be followed, the issue of September 15th could contain a full record of the proceedings of the entire meeting, without the papers and their discussion, of course. The segregation of the minutes and proceedings of the annual meeting in one issue for reference would be welcomed by many, even though they attended the meeting.

The issue of October 15th could contain the papers and proceedings of the scientific section; that of November 15th, the papers and proceedings of the commercial section; that of December 15th, the papers and proceedings of the dispensing section; that of January 15th, the papers and proceedings of the historical section; that of February 15th the papers and proceedings of the educational and legislative sections, and so within six months one would have a complete collection of the papers presented at the annual meeting as well as the proceedings of the meeting. Perhaps it would take seven months, if the number of papers is unusually large, or again it might take only four or five months if the number of papers read is below the average. All of this, would, of course, be subject to conditions.

The papers presented to local branches and contributed articles, as well as preconvention matters would keep this "15th of the month number" well supplied with material until the time of the next meeting when the same program could be repeated.

I realize that this is merely an outline and does not present all of the possibilities of a semi-monthly American Pharmaceutical Association Journal in detail, but I believe that if such a plan were followed it would be a distinct advantage to the Association, both from a revenue-yielding point of view, through increased advertising, and from the point of view of service to the members.

The semi-monthly issues could, of course, be gotten up in the same style as the monthly journal is appearing at present.

The plan outlined above has the advantage of enabling those who keep their copies of the "Journal" for reference, to have all of the papers presented to the Association and its branches consecutively arranged and classified under the various sections, by annually binding the issues appearing on the fifteenth of each month, in their numerical order.

If the news matters, editorials, etc., are to be kept, and it is certainly desirable for pharmaceutical workers that they should be, the issues appearing on the first of the month could also be bound in a separate volume.

Thus in the second instance one would have a volume recording a year's American Pharmaceutical Association news and in the first instance one would have a volume resembling the old "proceedings" of the Association, whose loss continues to be felt by pharmaceutical workers.

COMPARISON OF AMERICAN AND EUROPEAN SPRINGS.*

Research of the Department of Balneology of the College of Jersey City.

DR. FELIX VON OEFELE.

During the European war it is impossible or at least inconvenient to send patients to European mineral spring resorts. Therefore our Balneological Department herewith furnishes the following alphabetical list of well known European springs which can be replaced by American springs. The comparison is based on physical, chemical and physiological properties. This list is only preliminary, and it will be continuously supplemented and corrected in our files, if a reason becomes evident. More complete analyses of American springs are soon expected and for these different reasons a Department of Balneology has been instituted at the College of Jersey City.

Aachen—San Luis, California.
Abbach—Santa Rosa, White Sulphur Springs, California.
Abbazia—Atlantic City, N. J.
Adelheidsquelle—Americanus Mineral Well, Michigan.
Aix les Bains—Arrow Head Hot Springs.
Amelie les Bains—Clifton Springs, N. Y.
Antogast—Schooley Mountain Springs, New Jersey.
Apenta—Pluto, French Lick, Indiana.
Appollinaris—Arrington Mineral Springs, Kansas.
Assmannshausen—Lebanon Springs, New York.
Baden-Baden—Jemez Hot Springs, New Mexico.
Baden (Switzerland)—San Diego de los Banos, Cuba.
Baden (Austria)—San Diego de los Banos, Cuba.
Badenweiler—Las Vegas Hot Springs, New Mexico.
Bath (England)—Allegheny Spring, Pa.
Boklet—White Sulphur Springs, Sullivan County, New York.
Brueckenau—Adirondack Mineral Springs, New York.

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* It was deemed that the information given would be of special interest at this time.

Cudowa—Different Springs of Genesee County, New York.
Driburg—Schooley Mountain Springs, New Jersey.
Eilsen, Sharon Springs, N. Y.
Elster—Saratoga Springs, N. Y.
Ems—Des Chutes Hot Springs, Oregon.
Flinsberg (Schlesien)—Napa Soda Springs, California.
Franzenbad—Saratoga Springs, N. Y.
Freiersbach—White Sulphur Springs, N. Y.
Gleichenberg—Watkins, N. Y.
Grand Grille (Vichy)—Dripping Spring at Hot Springs, Arkansas.
Griesbach—White Sulphur Springs, N. Y.
Gurnigel—Cherry Valley Springs, N. Y.
Herrmannsbad—Coppers Well, Mississippi.
Holy Well (North Wales)—Waukesha Mineral Spring, Wisconsin.
Homburg—Condo Deutonian Well.
Honnef—Liberty, N. Y.
Hunyadi Janos—Crab Orchard Springs, Kentucky.
Inselbad—Sanitarium Colfax Well, Iowa and different springs of Jasper and Polk County, Iowa.
Johannisbad-Schmeckwitz—Jordans White Sulphur Spring, Vermont.
Karlsbad—South Dakota Hot Springs, or
San Bernardino Hot Springs, California, or
Atotonilco de San Andres, Mexico.
Kissingen—Saratoga Springs, N. Y., or Ballston Spa, N. Y.
Kreuznach—Climax Springs, Missouri or Green Springs, Ohio, or Catoosa Springs, Georgia.
Landeck—Saint Helena White Sulphur Springs, California.
Leuck—Hot Springs, South Dakota.
Levico—Oak Orchard Acid Springs, N. Y.
Liebenstein—Old Iron Spring at Ballston Spa, N. Y.
Liebenzell—Williamstown, Massachusetts.
Lippspringe—Tate Epsom at Tate Springs, Tennessee.
Luchon—Agua de Vida Spring, California.
Luettich—Sparta Magnetic Well, Wisconsin.
Luhatschowitz—Watkins, N. Y.
Luxeuil—Arkansas Hot Springs.
Marienbad—Saratoga Springs, N. Y.
Mehadia—Addison Sulphur Springs, West Virginia.
Meinberg—Richfield Springs, N. Y.
Monfalcone—Bauff Hot Springs, Canada.
Muskau—Red Mineral Spring at Eddyville, Iowa.
Nauheim—Abenakis Springs, Canada.
Nenndorf—Lower Spring at Avon Springs, N. Y.
Neuenahr—Manitou Springs, Colorado.
Neuhaus—Watkins, N. Y.
Offenbach—Tolenas Springs, California (contains Boron).
Petersthal—White Sulphur Springs, New York.
Pfaeffers-Ragatz—Baths of Aragon, Mexico.
Plombieres—Virginia Hot Springs.
Poestyen—San Diego de los Banos, Cuba.
Puellna—American Carlsbad Springs, Illinois.
Pyrmont—Pacific Congress Springs, California.
Reichenhall—Mount Clemens, Michigan.
Reinerz—Puller Springs, Montana.
San Remo—Florida.
Rehme-Oeyenhausen—Salt Lake Hot Springs, Utah.
Rippoldsau—White Sulphur Springs, N. Y.

Roncegno—Seven Springs, Virginia.
Rubinat—Sowders Springs, Kentucky.
Salso Maggiore—Saint Catherine's Well, Canada.
Salzbrunn—Saint Louis Springs, Michigan.
Schlangenbad—Lebanon Springs, N. Y.
Schmalkalden—Spring Lake Well, Michigan.
Sedlitz—B. B. Mineral Springs, Missouri.
Selters—Stafford Springs, Connecticut.
Sirmione—San Diego de los Banos, Cuba.
Soden—Aetna Hot Springs, California.
Spaa—Aurora Springs, Missouri.
St. Moritz—White Sulphur Springs, N. Y.
Stachelberg—Cairo, Greene County, N. Y.
Sulzbrunn—Sheboygan Mineral Well, Wisconsin.
Salzschlirf—Ballardeville, Massachusetts.
Tarasp—Saratoga Springs, N. Y.
Teplitz-Schoenau—Arkansas Hot Springs.
Tunbridge—Mountain Springs, Pennsylvania.
Tutzing—Lake Champlain, N. Y.
Vetriolo, see Levico.
Warmbrunn—Arkansas Hot Springs.
Weissenburg—Berry Hill Spring at Elkwood, Va., or Bedford Springs, Pa.
Wildbad—Virginia Hot Springs.
Wildungen—Adams Springs, California, or Allouez Mineral Springs, Wis.
Yverdon—Santa Barbara Hot Springs, California.

Comments and correspondence on this subject are requested and will be promptly answered.

THE PRESCRIPTION OF LIFE.*

J. W. ENGLAND.

Aunt 'Liza's former mistress was talking to her one morning, when suddenly she discovered a little pickaninny standing shyly behind his mother's skirts.

"Is this your little boy, Aunt 'Liza?" she asked.

"Yes, miss, dat's Prescription."

"Goodness, what a funny name, aunty, for a child! How in the world did you happen to call him that?"

"Ah simply calls him dat becuz Ah has sech hahd wuk gettin' him filled!"

Life is a funny proposition. It's just like the model prescription described by Joseph P. Remington in his model textbook on "Pharmacy." It may be compatible or incompatible, palatable or unpalatable, bitter, sour or sweet.

It may do good or harm. It may bring joy to the heart of the sick or ease the pain of the dying. It all depends upon the skill with which it is prescribed and compounded.

The prescription has six parts and so has life:

1. We have the "Superscription or heading." In the prescription, this consist of the symbol ℞, which is an abbreviation of the word recipe, meaning to "take," the imperative of the Latin verb recipio. The use of the inclined stroke on the tail of the R is traced to a custom in the ancient days of superstition, of

* From address to School of Pharmacy, Temple University, at the Smith, Kline & French Co. Laboratory, April 14, 1915.

placing at the top of the prescription an abbreviation or invocation, which represents a prayer to the favorite deity.

In life, the symbol stands for ourselves and we "take" all we can get, from infancy to old age, and constantly invoke the gods for more! Man comes into this world without his consent and he goes out the same way. When a baby, everybody wants to kiss him, and before he goes everybody—don't! "In his infancy he is an angel; in his boyhood he is a devil; in his manhood he is everything from a lizard up; in his dotage he is a fool!"

2. We have "the name of the patient." In the prescription, this is directed to be placed at the head of the prescription and transferred to the label. It is frequently omitted.

In life, we are labelled with a name as soon as we are born, and hang onto it like "grim death to a dead negro," unless we happen to be a "she," when we gladly change it, on request, for another name, sixteen or more years later.

3. We have "the inscription or the names and quantities of the ingredients." In the prescription, this is the most important part of all and requires the greatest amount of care in compounding. It embraces:

a. "The basis or chief active ingredient." The basic ingredient of life is character or moral excellence. Not what the world thinks a man is, but what he is; not what a man has been, but what he may become. With character, a man can fight down all the storms of life unafraid and undismayed, and he can go down to death, if needs be, with a smile on his lips and immortality in his eyes. Without character, he is a rudderless ship, bound to the land of nowhere. And we can train character, just as we can train flowers to become more and more beautiful.

b. "The adjuvant or aid to the basis, to assist its action." In life, the adjuvant is the just appreciation of "the value of time, the need of perseverance, the pleasure of work, the dignity of simplicity, the power of kindness, the influence of example, the obligation to duty, the wisdom of economy, the virtue of patience, the improvement of talent, and the joy of originating."

c. "The corrective, which is intended to qualify the action of the basis and adjuvant." In life, the corrective is rational optimism or a cheerful disposition—looking on the bright side of life and yet appreciating its cheerful disposition—looking on the bright side of life and yet appreciating its serious note. Thinking the best of your fellowmen and not the worst. Full of good cheer and yet responsive to sorrow. Looking upward, and not downward, forward and not backward, and lending a hand—and a smile, "pro re nata."

d. "The vehicle, the ingredient which serves to "carry all" or hold together, dilute them, and give to the whole, the proper consistence, form and color." In life, the "vehicle" is a man's daily work. In its prosecution, he has to use basis, adjuvant and corrective, and as he uses them, "secundem artem," so is the measure of his success.

4. We have "the subscription or directions to the compounder." In life, every man is the architect of his own fortune, and he must frame and follow his own directions. It is a case of "misce et fiat mistura."

5. Then we have "the signa (mark) or directions for the patient." In life, this is the service a man renders his fellowmen.

6. Finally, we have "the names or initials of the physician with the date." In life, the Great Physician orders, and the date is from birth to death—three score and ten years, perhaps a little longer—and then "finis," the prescription of life is completed.

What the end-result will be, in any individual case, no man knoweth, because no one has ever returned from the Great Beyond to tell us. But with faith and courage and cheerfulness, coupled with the best thought of which we are capable, let us compound our prescription of life according to the "talents" given us, so that it shall be of lasting credit to ourselves, our profession and our Alma Mater.

IODINE OINTMENT—DATA AND METHOD OF ASSAY.

LEO H. FRIED, PH. G., PHAR. D.

Before explaining the method of assay, let us first consider the absorption of iodine by benzoinated lard. The free iodine in the ointment is readily absorbed by the lard, even though potassium iodide and glycerin are present to retard this. The figures which I have computed by various experiments will readily show this.

A. N. D. Pullen explains in "The Pharmaceutical Journal and Pharmacist," November 16, 1912, page 610, that if no glycerin or potassium iodide were present in the ointment there would only be one twentieth of iodine in the free state within a few hours. He also claims that in the presence of glycerin and potassium iodide the absorption is attenuated, so that after a lapse of four months there still is 2.92 percent of the original 4 percent in free state. However, I find in my experiments that within a period of ten days there is 1.16 percent of iodine absorbed, leaving 2.84 percent free iodine. This ointment which I experimented with was kept at ordinary room temperature on a shelf, so that the changes of temperature was that of any ordinary room. On examining this ointment ninety days later, I found that only a trace of absorption had taken place. After a period of eight months from the date of compounding, no more iodine was absorbed.

METHOD OF ASSAY.

I first made up one hundred grammes of iodine ointment according to the U. S. P. VIII, page 494, as follows:

Iodine	4 gms.
Potassium Iodide	4 gms.
Glycerin	12 gms.
Benzoinated Lard	80 gms.
	100 gms.

ASSAY FOR FREE IODINE.

Carefully clean, dry and tare 120 cc. Erlenmeyer glass stoppered flask and accurately weigh into it from 3.0 to 5.0 gms. of ointment, using a glass rod for the transfer of same. Add 30 cc. chloroform, shake the flask a few minutes until the ointment is apparently dissolved. Then add 30 cc. of distilled water and shake (this will dissolve the potassium iodide and glycerin which did not go into the chloroformic solution). Immediately, titrate the solution with N/10 sodium thiosulphate, shaking the flask well after every addition until a light yellow color

still remains, and add about 1 cc. cold starch T. S., and continue titration until the blue color of starch iodide disappears after vigorous shaking and does not return in one minute.

I specifically mention that the titration should be immediately performed so that the chloroformic solution will not aid in the absorption of iodine by the lard

CALCULATION.

$$\frac{\text{No. of cc. used} \times \text{factor} \times 100}{\text{Weight of sample}} = \text{percent of free Iodine}$$

On assaying as above I have the following figures of free iodine:

Immediately after making	3.89%
One hour " "	3.51%
One day " "	3.48%
Five days " "	3.06%
Ten " " "	2.84%
Thirty " " "	2.81%
Ninety " " "	2.8096%
Eight months " "	2.8095%

By these figures we see that the absorption goes on slowly until the maximum amount is absorbed.

ASSAY FOR POTASSIUM IODIDE.

Accurately weigh about 5 gms. of ointment into an ordinary 250 cc. Erlenmeyer flask and attach to a distillation apparatus, using as a receiver a 250 cc. glass stoppered Erlenmeyer flask, containing one gm. potassium iodide dissolved in 30 cc. distilled water and add to it 30 cc. of chloroform. Allow the end of the condenser tube to dip into this mixture. Make all connections air-tight, using rubber stoppers and not cork. Mix 5 cc. sulphuric acid with 150 cc. of distilled water, add the acid mixture quickly into the flask. Drop in a few pieces of pumice stone which have previously been heated to redness and dropped into cold water. Finally drop in a piece of ferric alum, about 5 gm. Place upon a wire gauze and apply direct flame very slowly at first, until the purple vapors of iodine have all distilled over. The iodine will sometimes condense in the tube and not go down into the receiving flask; if this happens move the flame and allow the liquid in the flask to suck up into the tube, whence it will dissolve the iodine. Replace the flame and continue distillation until an oily substance comes over. Discontinue the distillation by first removing the tube from the liquid in the receiving flask. Then take away the flame. Wash out the condenser tube and end with about 20 cc. distilled water. Immediately titrate the distillate with N/10 sodium thiosulphate, shaking the flask vigorously after every addition. Note the number of cc. of V. S. used, and calculate total iodine liberated.

CALCULATION.

$$\frac{\text{No. of cc. used} \times \text{factor} \times 100}{\text{Weight of sample}} = \text{percent total Iodine}$$

Total Iodine less *Free Iodine* equals *Iodine from KI*

$$\text{Iodine} : \text{Potassium Iodide} :: \text{Iodine from KI} : \text{Potassium Iodide } X = \text{percent KI}$$

$$125.9 : 164.76 :: \text{Iodine from KI} : X = \text{percent KI}$$

I will admit that this distillation process is not the speediest way of obtaining the percentage of potassium iodide in the ointment, but I can say that it is the most accurate. I have tried other processes such as, washing out the potassium

iodide by means of hot water, also using oxidizing agents such as ferric chloride, sodium nitrite, potassium permanganate, manganese dioxide, etc., to liberate iodine from the potassium iodide, and find that liberation is either incomplete or else the oxidizing agents interfere with the final titration. By the above method given, I got an average of 3.91 percent of KI from four titrations.

In conclusion, while this does not directly belong to the assay, I might state that from a therapeutical standpoint, many physicians I have spoken to on the subject, seem to prefer an ointment that is not freshly prepared as required by the U. S. P., but claim that an older ointment has the same effect with milder action.

DEPARTMENT OF PHARMACY, COLLEGE OF JERSEY CITY.

MAGNESIUM PHOSPHATE IN POPPY CAPSULES.

J. E. KIMLEL, PH. C.

Whether or not the knowledge of the existence of magnesium phosphate in poppy capsules is new, the writer is unable to state. The literature, so far as investigated, makes no mention of it.

Since the existence of the anti-narcotic law, preparations of poppy heads will undoubtely receive more attention from the chemist.

Morphine is the important constituent and varies, according to King, from 1 to 2 percent.

To the busy chemist with little time for research, the U. S. P. method for determination of morphine in opium preparations will probably be applied, which may lead to very serious error in the final result.

Magnesium phosphate being slightly soluble in the hydro or hydro-alcoholic menstruum used, is extracted from the ground capsules and remains in the finished product.

In the course of assay, using the fluidextract for example, the extract is concentrated, ether and alcohol added and ammonia water to liberate the morphine. The whole is then vigorously shaken and set aside to allow the morphine to crystallize.

The magnesium phosphate originally present in the capsules and again in the fluidextract is by this process converted into insoluble ammonium-magnesium phosphate, which crystallizes out along with the morphine, providing enough ammonia water has been added to render the whole alkaline, otherwise no morphine will be found in the residue.

The ammonium magnesium phosphate resembles minute crystals of morphine and with a little washing is rendered bright and clean, still retaining a yellowish color, imparted by the mother liquor.

If now the residue is weighed and calculated as morphine, without further purification, as is sometimes done in the assay of opium (the writer is not discussing the propriety of such an omission) the analyst's report will not show the correct morphine content.

From this it can easily be seen that any method for the determination of morphine in poppy capsules that depends upon the crystallization of the morphine

from an ammoniacal solution and the subsequent weighing as such, will be productive of error.

Calcium was also found to a considerable extent in the ash of the capsules but was absent from the precipitate produced by ammonia in the concentrated fluid extract.

ANALYTICAL DEPARTMENT, ALLAIRE, WOODWARD & CO., Peoria, Ill.

THE QUALITY OF COMMERCIAL BLAUD'S PILLS.*

L. E. WARREN, PH. C., B. S.

In view of the known instability of ferrous salts, it has been generally held that pills of ferrous carbonate U. S. P. (Pilulæ Ferri Carbonatis, U. S. P.), commonly known as Blaud's pills, are unstable. Thus, the U. S. Pharmacopœia directs that they shall be freshly prepared when wanted. Pharmaceutic manufacturing houses, evidently holding this requirement to be unnecessary, almost universally sell ready-made Blaud's pills. On the other hand, some firms sell special forms of the preparation with claims of keeping qualities superior to the ordinary pill. Nevertheless, it was recently pointed out[1] that a proprietary brand of Blaud's pill, which the manufacturer claimed to be greatly superior in keeping quality to the ordinary Blaud's pill, and an ordinary commercial specimen, were each of good quality. To determine whether there is justification for the sale of ready-made Blaud's pills, and to determine whether the existence of special forms of Blaud's pills is warranted, an examination of the principal market brands was undertaken. Twelve freshly purchased specimens were examined, together with a specimen of each of three brands which were known to be several years old. Three specimens of the freshly-purchased pills were what the manufacturers called "soft mass" pills.

Some of the claims made for the "soft mass" pills are:

". . . present advantage of being rapidly soluble and disintegrating in the stomach and intestinal tract. . . . Under proper storage conditions they retain their soft consistency and shape perfectly."

"They disintegrate or dissolve readily in the digestive tract.

"They keep well, i. e., do not lose strength under proper conditions of storage.

"They show little tendency to become hard when kept under reasonable conditions.

"They are strictly true to formula."

The "soft mass" pills were "chocolate-coated." The remainder, except where stated to the contrary, were gelatin-coated. Three of the specimens (one of which was old) were not claimed to have been prepared according to the U. S. P. formula, but in general were claimed to contain the ingredients from which ferrous carbonate is produced, so that after ingestion ferrous carbonate in the "nascent" state would be formed in the alimentary tract. A number of the specimens were proprietary. These included Frosst's Blaud Capsules; Laminoids Ferruginous (nascent) Schieffelin; Laminoids Blaud (a specimen known to be at

* Contribution from the Chemical Laboratory of the American Medical Association. Reprinted from the Journal A. M. A., April, 1915.

[1] Queries and Minor Notes, the Journal A. M. A., Oct. 1, 1914, p. 1315.

least seven years old) Schieffelin; Ferruginous Blaud, Upjohn (one of the "nascent" preparations), and two specimens of tabloids (one of which was old). The laminoids were uncoated. The tabloids were sugar-coated. With one exception all of the preparations were stated to contain 5 grains of Blaud's mass, which is equivalent to about 1 grain of ferrous carbonate. This one was a specimen of Tabloids Blaud Pill and Aloin which was known to be at least six and one-half years old. One specimen of gelatin-coated Blaud's pills (Parke, Davis & Co.) also was known to be at least six and one-half years old.

Concerning Frosst's Blaud capsules, the following claims were made:

"Blaud capsules 'Frosst' represent freshly precipitated Ferrous Carbonate of a high percentage of purity, deprived of moisture and incorporated with Castor Oil that it may be readily incapsulated in a freely soluble gelatine covering. The capsules do not harden with age nor the contents oxidize."

The cost of Frosst's Blaud capsules was nearly twice that of any other brand of Blaud's pills examined.

The following statements were made concerning Laminoids:

"The Laminoids (Ferruginous, Nascent) consist of two lamina, one of ferrous sulphate and the other of sodium bicarbonate, united by pressure. When brought in contact with water or the fluids of the stomach, chemical action at once takes place, producing fresh ferrous carbonate with the accompanying salts. An excess of carbonate is present to neutralize the acid in the stomach.

"In Laminoids (Ferruginous, Nascent) the physician will find an absolutely reliable means of administering Blaud's formula, without the possibility of the efficiency of this time-tried remedy being impaired by oxidation and the formation of more or less inert material."

The total iron content in the several preparations was determined gravimetrically, and the amount of ferrous carbonate determined by titration. In order to obtain information as to the variation among the individual pills, the assays for ferrous carbonate were made on three pills taken together and on each of three pills taken singly, or four assays in all. The average was then obtained by dividing by six. In some instances, additional assays were made. The results in some cases show considerable variation from the claimed amount of medicinal ingredients. In some of the brands the average results found by titration for ferrous carbonate were somewhat higher than those obtained by calculation from the determination of total iron. Evidently this is due to the fact that because of great variations in the weight of individual pills, uniform samples could not be obtained. The total iron content of the real Blaud pills when calculated to ferrous carbonate varied between 77 and 156 percent of the amount claimed, and that of the "nascent" preparation between 88 and 183.2 percent of the amount claimed. The determinations of ferrous carbonate did not markedly fall below this, showing that oxidation had not taken place to any considerable extent. The analytic findings are given in the accompanying table.

In order to obtain some information as to the relative disintegrating properties of the several brands of pills, tests were carried out by treating a specimen of each (1 pill) with 90 cc. of 0.2 percent hydrochloric acid at ordinary temperature in a 100 cc. Erlenmeyer flask, and agitating the mixture by inverting once every ten minutes. This process was continued until the pill had become disintegrated, or until the experiment had continued for nine hours. In a second series of tests at the end of six hours, the acid was removed from such of the pills as had

TABLE SHOWING QUALITY OF COMMERCIAL BLAUD'S PILLS

Product	Manufacturer	Claims; Composition	Ferrous Carbonate Calculated from Determination of Total Iron. Percent of Claim	Ferrous Carbonate (by Titration of Ferrous Iron). Percent of Claim	Disintegration in Acid Solution (Hours)	Disintegration in Alkaline Solution Following Acid (Hours)
Blaud Capsules	Charles E. Frosst & Co.	5 gains, approximately ½ grain of iron in the ferrous state	77	79.2*	No effect except to dissolve coating	No effect
Blaud Pill	Sharpe and Dohme	5 grains U. S. P.	91.8	92.6	6.00 5.00 6.00+	0.50
Blaud Pill, Soft	Sharpe and Dohme	5 grains U. S. P.	99.5	96.2	3.00 2.00 3.50 2.00	
Blaud Pill	John Wyeth and Brother	5 grains U. S. P.	114.2	113.9	8.50 6.00	
Blaud Pill	Eli Lilly & Co.	5 grains U. S. P.	117.7	112.5	3.50 2.00 4.00	
Blaud Pill, Soft	Eli Lilly & Co.	5 grains U. S. P.	121.4	120.1	6.00 7.00 6.00+	1.00
Ferrous Carbonate (Blaud)	Parke, Davis & Co.	5 grains U. S. P.	117.6	121.3	4.50 4.00	
Ferrous Carbonate (Blaud) soft	Parke, Davis & Co.	5 grains U. S. P.	156.2	153.9	2.00 2.50	
Ferrous Carbonate (Blaud) (old specimen)	Parke, Davis & Co.	5 grains U. S. P.	142.3	143.7	7.00 6.00+	6.00†
Ferruginous Blaud	Wm. S. Merrell Chemical Co.	5 grains	117.4	105.9	1.00 2.00 3.00	
Ferruginous (Blaud's)	The Upjohn Company	5 grains	183.2	169.5	5.50 8.00 6.00+	4.00
Laminoids Ferruginous (nascent)	Schieffelin & Company	5 grains	121.3	126.4	1.50 2.00	
Laminoids Blaud's (old specimen)	Schieffelin & Company	5 grains	87.7	74.9	1.00 1.00	
Tabloid Blaud Pill	Burroughs, Wellcome & Co.	5 grains	104.3	104.1	7.00† 6.00+	6.00†
Tabloid Blaud Pill and Aloin (old specimen)	Burroughs, Wellcome & Co.	Blaud Pill 4 grains (20% ferrous carbonate); Aloin 1/20 grain	106.1	113.1	8.50 6.00+	6.00†

* The apparent discrepancies between the amount of ferrous carbonate as calculated from the determination of total iron and that obtained by titration of ferrous carbonate are explained elsewhere in this paper.

† Not completely disintegrated in twenty-four hours.

not become completely disintegrated, and 90 cc. of a 1 percent solution of sodium carbonate substituted. The digestion was then continued as described above until the pill had become completely disintegrated, or until a period of six hours had elapsed. Although the disintegration would undoubtedly have taken place more rapidly at a temperature of 37° C. and possibly faster in a weak pepsin solution, it is believed that for comparative purposes the results obtained are sufficient.

The results not only showed great variation among the several brands, but also considerable variation among the several pills of the same brand. The Laminoids disintegrated the most readily, but these were not coated. The next in order were the Parke, Davis & Co. brand of soft mass pills and the Sharp & Dohme brand of soft mass pills. It should be noted that the Lilly brand of soft mass pills disintegrated more slowly than the ordinary kind from that firm. The results are given in the table.

The results of the examination refute the commonly assumed instability of ready-made Blaud's pills. On the other hand, it is seen that the Blaud's pills of the market are not very reliable as to iron content. A range of from 77 to 182 percent of the claimed amount of ferrous carbonate denotes carelessness in manufacturing or lack of proper analytic control over the finished product. Further, the examination demonstrates that the "nascent" preparations, the soft mass pills, and the gelatin encapsulated oily suspension show no advantage over the ordinary kinds. In view of the findings, physicians should consider the advisability of directing the pharmacist to prepare Blaud's pills according to the U. S. P. whenever they are prescribed.

THE N. A. R. D. DRAFT FOR A STATE ANTI-NARCOTIC LAW.

J. H. BEAL, URBANA, ILL.

The N. A. R. D. Draft for an Anti-Narcotic Law suitable for state enactment was prepared by a special committee of three appointed by the N. A. R. D. Executive Committee, the special committee consisting of J. H. Beal, Mr. Hugh Craig, Editor of the N. A. R. D. Journal, and Frank H. Freericks, Esq., of Cincinnati.

The principal purposes of the draft are:

(1) To promote uniformity in state legislation respecting the possession and sale of anti-narcotic drugs.

(2) To provide a body of well-considered provisions from which selections can be made for use in states where the existing laws need to be revised in order to bring them into correspondence with the Harrison Act.

(3) To provide a list of provisions that can be utilized in preparing substitute bills for less acceptible measures which may be introduced into state legislatures.

To the objection that the bill seems rather lengthy it may be said that it is not really as long as it seems to be, its apparent length being due mainly to the separation of Section One into series of brief sub-sections or paragraphs, each dealing with some particular subject or exemption. It is true that all of these sub-sec-

tions might have been condensed into a single paragraph by the liberal use of general terms and connective, but the advantage gained by any such condensation would have been more than offset by the loss in directness and certainty, the two prime requisites in statutory enactments, especially in those which have a criminal bearing.

Another reason the committee had in mind was that an "expanded" or "open" form of draft would render it easier for legislative committees to select the provisions which, with slight modifications, will best suit their requirements.

The same advantage will apply in the striking out of specific provisions which may not be acceptable, or in adding other features which may be desired, since almost any of the specific provisions of the draft can be stricken out or modified without disrupting or destroying the general coherence of the bill.

The following brief review is intended to set forth some of the more important features of the draft.

The first paragraph of Section One adds to the drugs named in the Harrison Act "alpha- and beta-eucaine," and "synthetic substitutes," because it was thought that in most states there would be a demand for their inclusion. If it is not desired that these drugs be included the words can be stricken out without disarrangement of the paragraph.

The second paragraph of this section makes proof of possession *prima facie* evidence of dealing in the drugs possessed, which should be of value in the administration of the law in cases where considerable quantities of the drugs are found in the possession of persons not authorized to deal in them, but where no direct evidence of dealing in them can be secured. The presumption created by the paragraph being only *prima facie*, the defendant will be permitted to show that his possession was lawful and did not involve a dealing in the drugs possessed.

If not desired in the law, the provision can be dropped without marring the draft.

Taking them in their order, the various provisions or exceptions of Section One are as follows:

(*a*) This proviso exempts from all of the requirements of the law such chemical constituents and derivatives of opium, coca leaves, and their alkaloids as do not possess narcotic or habit-forming properties. There are quite a number of these innocent substances, such as meconic acid, apomorphine, etc., that are neither narcotic nor habit-forming, and it would be absurd to apply to them the restrictions imposed upon dealing in the harmful compounds and derivatives.

The presence of this saving clause in the bill will also tend to check the activity of over-zealous officials who might be inclined to stretch the meaning of the word "derivative" so as to include many other things not intended to be covered by the law as, for example, that "benzoic acid should be regarded as a derivative of cocaine because it is one of the substances produced by the decomposition of that alkaloid," etc.

It cannot be contended that the presence of this sub-section will in any way weaken the effectiveness of the measure for the control of the sale of habit-forming narcotic drugs, since in a later section it is provided that defendant claim-

ing the benefit of any exemption under the law must sustain the burden of proof to establish his right to such exemption.

(*b*) Sub-section *b* enumerates certain persons, manufacturers, hospitals, institutions etc., who may lawfully possess the drugs enumerated in the first paragraph of Section One. To prevent the possible organization of fictitious companies, hospitals, etc., for the purpose of dealing in these drugs in an illegitimate way, this sub-section makes it necessary for all such companies and institutions to be authorized or licensed in accordance with Section Three, and by reference to the latter section it will be seen that the only institutions which will need this special license will be those which do not have a licensed pharmacist, physician, dentist or veterinarian in their employ. As practically all reputable houses and institutions have one or more of such qualified persons on their staffs, this provision should not occasion any hardship to legitimate interests.

If deemed desirable by legislative committees, the list of persons covered by sub-section *b* can be either increased or decreased.

(*c* & *d*) Sub-sections *c* & *d* provide for the possession of the drugs by persons other than those who deal in them on their own account.

(*e*) Sub-section *e* provides for the possession and sale of mixtures containing certain limited amounts of narcotic drugs. The quantities named are the same as those specified in Section Six of the Harrison Act, but the wording is slightly modified to indicate that these permitted quantities can not be cumulated, i. e., that it will not be permissible in such preparations to use the maximum amount of one opium alkaloid plus the maximum amounts of each of the others, unless the total of such alkaloids will not exceed the maximum of that which would be contained in the extractive of two grains of opium. The accompanying proviso is also modified by requiring the admixture of other active drugs with the narcotic drugs, so that the intention of the act could not be defeated by dispensing the latter mixed with large quantities of inert diluents, as water or sugar.

(*f*) The provisions of sub-section *f* govern the sale of narcotics by authorized dealers, etc., to each other or to persons entitled to obtain them without a prescription. Though differing somewhat in their phraseology, these provisions are practically the same in effect as the corresponding provisions of the Harrison Act, so that the use of the order blank and the making of the records required by that act will serve as a compliance with the provisions of the state law, thus avoiding the duplication of records relating to the same transaction.

(*g*) Sub-section *g* relates to prescriptions and the requirements as to dating, filing, repetition, etc., and these requirements are substantially the same as are to be found in most of the state laws which deal with the subject. By the reference which is made to sub-section *e* it is evident that the requirements concerning filing, dating, repetition, etc., do not apply to prescriptions for the quantities specified in that sub-section.

The requirements for the labeling of containers are made specific, so as to prevent the dispensing of narcotic mixtures in such a manner that they cannot be traced to the prescriptions upon which they are alleged to be based.

(*h*) Sub-section *h* relates to the dispensing of narcotic drugs by licensed physicians, dentists, and veterinarians. It does not place any limit upon the *quantity*

which they may dispense in legitimate practice, but does require that a *record shall be kept* when more than the quantities specified are dispensed at one time.

It is conceded that there should be no unnecessary interference with the rights of licensed physicians to administer to their legitimate patients such drugs as they may deem necessary, but it must be remembered that exemptions of this kind, if too liberal, will permit of the practical nullification of the law by unscrupulous practitioners, and it is essential therefore that some limit be placed upon the quantities of such drugs which may be dispensed without keeping a record.

The committee does not assert that the quantities specified in this sub-section are the most appropriate or suitable quantities, and it will be open to legislative committees who may desire to use this sub-section to either increase or decrease these exempted quantities as in their discretion it may seem advisable.

Section Two of the draft relates to the prescribing or furnishing of narcotic drugs for the use of habitues. It permits a licensed physician to prescribe or furnish whatever he may deem necessary for the treatment of a patient for the cure of a drug habit, but requires certain notices to the state board of health and the keeping of certain records, in order that unscrupulous members of the profession may not be tempted to abuse their professional privileges by supplying habitues with the drugs in quantity without making any attempt whatever to effect a cure.

The same section prohibits the prescribing or furnishing of the drugs by a dentist for the use of any person not under his professional treatment as a dentist, or for any other purpose than as a part of such treatment. Veterinarians are also forbidden to prescribe or furnish such drugs for the use of any human being.

Section Three provides that certain manufacturers, dealers, hospitals, etc., that do not have a licensed pharmacist, physician, dentist, or veterinarian in their employ to dispense the drugs covered by the law, must obtain a license from the state board of pharmacy before they can lawfully possess or handle them.

The second paragraph of this section authorizes the sale of preparations containing the quantities exempted in sub-section *e* of Section One only by dealers having a fixed place of business and located at least one mile distant from a licensed pharmacist or physician, and only when specially licensed by the state board of pharmacy. That is to say, itinerant vendors will not be permitted to sell preparations containing narcotic drugs in the quantities named in subsection *e* of Section One, nor will general stores be permitted to handle them unless their place of business is at least one mile distant from the place of business of a licensed pharmacist or the office of a licensed physician.

(This licensing feature, of course, has nothing to do with pharmacists or other persons who are authorized to deal in these drugs by other provisions of the bill.)

Under the third paragraph of this section the state board of pharmacy will not grant such special license unless satisfied that the preparations will be used only for legitimate purposes.

Section Four of the draft relates to penalties. In addition to the offenses ordinarily provided for in anti-narcotic laws, it introduces some necessary prohibitions regarding the forgoing, altering, or destruction of prescriptions or other records, the making of false pretenses for the purpose of obtaining narcotic drugs,

etc., and exempts pharmacists from liability for the innocent dispensing of such drugs upon false or altered prescriptions, etc.

The penalties prescribed are *maximum* penalties only, so that the court will be able to "make the punishment fit the crime," by inflicting a light fine for merely technical or trivial offenses.

The last paragraph of this section makes it necessary for those who claim the benefit of exemptions in the law to show by the evidence that they are entitled to such exemptions, and is a quite necessary provision if the law is to be effectively enforced.

Section Five provides for suspension or revocation of the license of persons who have been twice convicted of violating the law, but the convictions must be obtained in a "court of record," i. e., in a court above the grade of the ordinary magistrate's court, and must be for "substantial," and not for merely trivial or technical violations.

The same section also provides the means for the revocation of the license of one who has become so addicted to the use of drugs as to make him an unsafe person to handle them.

The last paragraph of Section Five also makes it possible to prosecute separately a member or agent of a corporation, etc., and inflict upon such persons the penalty of imprisonment and revocation of license.

The remaining sections are of the usual sort, and present no features deserving of comment.

The committee do not offer the draft as an ideal measure that cannot be improved upon, but rather as one which has been formulated after a considerable study of the subject and as one presenting a variety of provisions that should be useful to legislative committees who are charged with the framing of bills for state enactment.

It is natural to expect that in a bill the length of this there will be particular features to which all will not agree. The committee itself did not always reach its decisions by a unanimous vote, and therefore will not feel aggrieved if its conclusions do not in every instance meet with the full approval of those who were not members of the committee.

It is perhaps needless to add that the committee does not advocate the enactment of this or of any other measure unless there is a real need for new legislation to correct existing state laws or to bring them into correspondence with the Federal law, known as the Harrison Act.

Never to despise, never to judge rashly, never to interpret other men's actions in an ill sense; but to compassionate their infirmities, bear their burdens, excuse their weakness, make up and consolidate the breaches of charity happened by their fault, to hate imperfections, and ever to love men, yea, even your enemies; therein the touchstone of true charity is known.—*N. Caussin.*

REPORT OF COMMITTEE ON UNOFFICIAL STANDARDS.

The following portion of the report of the Committee on Unofficial Standards relates to certain crude drugs and chemicals suggested for inclusion in the next revision of the National Formulary, and by order of the Council is published in the Journal in order to afford opportunity for discussion before the standards proposed are finally adopted.

Manufacturers, importers, analysts, and others interested in any of the proposed standards, are requested to send their criticisms and comments to the chairman of the committee, George M. Beringer, 501 Federal St., Camden, N. J.

ALUMINI CHLORIDUM.

Aluminum Chloride.

1. It contains Aluminum Chloride ($AlCl_3+6H_2O=241.57$) corresponding to not less than 20.5 percent of Aluminum Oxide Al_2O_3. Aluminum chloride is to be kept in well-stoppered containers.

2. White, or yellowish white, deliquescent, crystalline powder; nearly odorless; taste sweet and very astringent.

3. Soluble in about 1 part of water and about 3 parts of Alcohol at 25° C., also soluble in glycerin.

4. An aqueous solution (1 in 10), should be clear, and show an acid reaction to litmus, and yield with silver nitrate T. S. a white curdy precipitate insoluble in nitric acid, and with ammonia water a white gelatinous precipitate almost insoluble in an excess of ammonia water, and with potassium hydroxide T. S. a white gelatinous precipitate completely soluble in an excess of the reagent.

5. 10 cc. of an aqueous solution (1 in 100), after the addition of .2 cc. of barium chloride T. S. must not become cloudy within one minute (limit of sulphate).

6. 10 cc. of an aqueous solution (1 in 50), must not respond to the Time-Limit Test for *heavy metals* omitting the addition of ammonia water.

7. The addition of .3 cc. of potassium ferrocyanide T. S. to 20 cc. of an aqueous solution (1 in 150), must not produce a blue coloration within one minute (Iron).

8. 5 cc. of an aqueous solution (1 in 25), must not respond to the U. S. P. Modified Gutzeit Test for Arsenic.

9. Dissolve about .5 gm. of the salt, accurately weighed, in 100 cc. of water, add 1 gm. of ammonium chloride and then precipitate the aluminum hydroxide by the addition of a slight excess of ammonia water to the boiling solution. Collect the precipitate on a filter, wash it with distilled water, dry, ignite thoroughly and weigh. The weight of the aluminum oxide so obtained must not be less than 20.5 percent of the weight of the aluminum chloride used.

ALUMINI SULPHAS.

Aluminum Sulphate.

1. It should contain not less than 99.5 percent of pure Aluminum Sulphate $Al_2(SO_4)_3+16H_2O=630.67$.

2. A white, crystalline powder, or shining plates, or crystalline fragments; without odor, having a sweetish and afterwards an astringent taste, and permanent in the air.

3. Soluble in 1 part of water at 25° C. (77° F.), more soluble in boiling water, but insoluble in alcohol.

4. When gradually heated to about 200° C. (392° F.), it loses its water of crystallization (45.7 percent of its weight).

5. The aqueous solution of the salt has an acid reaction upon blue litmus paper.

6. The aqueous solution of the salt yields, with barium chloride T. S., a white precipitate insoluble in hydrochloric acid; and with potassium hydroxide T. S., a white, gelatinous precipitate which is soluble in an excess of the alkali, but which is again separated on the addition of a sufficient amount of ammonium chloride T. S.

7. If 1 gm. of Aluminum Sulphate be gently heated with 5 cc. of potassium hydroxide T. S., the liquid should not evolve the odor of *ammonia*.

8. A filtered, aqueous solution of the salt (1 in 10) should not become more than faintly opalescent within five minutes after the addition of an equal volume of tenth-normal sodium thiosulphate V. S. (limit of *free acid*).

9. The aqueous solution of the salt (1 in 20) should not respond to the U. S. P. Time-Limit Test for *heavy metals*.

10. The addition of 5 drops of potassium ferrocyanide T. S. to 20 cc. of the aqueous solution of the salt (1 in 50) should not pro-

duce at once a blue coloration (limit of *iron*).

11. 5 cc. of an aqueous solution (1 in 25) must not respond to the U. S. P. Modified Gutzeit Test for Arsenic.

12. Dissolve about .5 gm. of the salt, accurately weighed, in 100 cc. of water, add 1 gm. of ammonium chloride and then precipitate the aluminum hydroxide by the addition of a slight excess of ammonia water to the boiling solution. Collect the precipitate on a filter, wash it with distilled water, dry, ignite thoroughly and weigh. The weight of the aluminum oxide so obtained must not be less than 16.1 percent of the weight of the aluminum sulphate used.

ANTIMONII OXIDUM.

Antimony Oxide.

1. It contains not less than 97 percent of antimonous oxide (Sb_2O_3=288.4).

2. Antimony Oxide is a white or grayish white powder odorless and tasteless.

3. It is insoluble in water, alcohol or nitric acid, readily soluble in hydrochloric acid without effervescence, and also in a warm solution of tartaric acid or in a boiling solution of potassium bitartrate.

4. When heated it turns yellow, becoming white again on cooling. At a dull red heat it fuses to a yellowish liquid, volatilizing at a higher temperature.

5. When dissolved in a slight excess of hydrochloric acid and this solution diluted with a large volume of water, a white precipitate is produced which is changed to orange by hydrogen sulphide.

6. The solution of 0.1 gm. of the oxide in 3 cc. of hydrochloric acid and 5 cc. of distilled water is not rendered turbid at once by a few drops of barium chloride T. S. (sulphate).

7. The solution of 0.1 gm. of the oxide in 10 cc. of distilled water and 1 gm. of tartaric acid does not become more than slightly opalescent after the addition of 0.2 cc. nitric acid and 0.2 cc. silver nitrate T. S. (chloride).

8. Dissolve 0.5 gm. of the oxide in 10 cc. of hydrochloric acid, dilute the solution with distilled water until it begins to become permanently turbid and then precipitate with hydrogen sulphide. This precipitate when thoroughly washed with distilled water dissolves in ammonium or sodium sulphide T. S., without leaving a black insoluble residue (copper, lead).

9. A solution of 0.1 gm. of Antimony Oxide in 5 cc. of hydrochloric acid does not respond to Bettendorf's test for arsenic.

10. Weigh accurately about 0.2 gm. of Antimony Oxide, dissolve it by warming with a solution of 1 gm. of tartaric acid in 10 cc. of distilled water, (adding a few drops of hydrochloric acid to aid the solution), nearly neutralize the solution with sodium carbonate, then add 40 cc. of a cold saturated solution of sodium bicarbonate and titrate at once with tenth-normal iodine, using starch T. S., as indicator.

11. The titration shows not less than 97 percent of antimonous oxide. Each cc. of tenth-normal iodine corresponds to 0.007210 gm. of antimonous oxide.

ANTIMONII SULPHIDUM PURIFICATUM.

Purified Antimony Sulphide.

1. It contains antimony corresponding to not less than 97 percent of antimony trisulphide (Sb_2S_3=336.61).

2. Purified Antimony Sulphide is a heavy grayish black powder, odorless and tasteless.

3 It is insoluble in water or alcohol, soluble in hydrochloric acid with the evolution of hydrogen sulphide.

4. At a temperature below a red heat it fuses to a dark brown liquid.

5. A solution made by boiling the sulphide with a moderate excess of hydrochloric acid, until the vapors no longer blacken lead acetate paper, yields, when added to about ten times its volume of water, a white precipitate which is changed to orange by hydrogen sulphide.

6. Intimately mix 2 gm. of the sulphide with 8 gm. of pure sodium nitrate, fuse the mixture in a porcelain crucible, and after cooling boil the mass with 25 cc. of distilled water and filter. Acidulate the filtrate with nitric acid, boil it until no more nitrogen oxide is evolved, then dissolve in the solution about 0.1 gm. of silver nitrate, filtering again, if necessary, and cautiously over lay 10 cc. of this solution with a few drops of ammonia water. Not more than a white cloud, but no red or reddish precipitate appears at the line of contact of the two liquids (limit of arsenic).

7. Weigh accurately about 1 gm. of Purified Antimony Sulphide, mix it with 20 cc. of hydrochloric acid, and then with a clear solution of 5 gm. of tartaric acid in 10 cc. of water and heat the mixture gently on the

water bath until the vapors no longer blacken lead acetate paper. Now filter the solution, wash the residue, if any, with distilled water until the washings are neutral to litmus and ignite it. The weight of the residue does not exceed 1 percent.

8. Dilute the filtrate and washings from the preceding test to 200 cc., nearly neutralize 50 cc. with sodium carbonate, add 40 cc. of a cold saturated solution of sodium-bicarbonate and titrate at once with tenth-normal iodine, using starch T. S. as indicator.

9. The titration indicates an amount of antimony corresponding to not less than 97 percent of antimony trisulphide. Each cc. of tenth-normal iodine consumed corresponds to 0.008415 gm. of antimony trisulphide.

BERBERIS.

Berberis (Oregon Grape Root).

1. The rhizome and roots of species of the section *Odostemon Rafinesque* of the genus *Berberis* Linné (*Fam. Berberidaceae*).

2. Cylindrical, more or less knotty, strongly branched, usually cut into pieces of varying length and up to 45 mm. in diameter; externally light yellowish-brown, longitudinally wrinkled and short scaly; fracture hard and tough; bark 1 mm. in thickness, easily separable into layers, wood yellow, the color more pronounced upon wetting, distinctly radiate, and showing rings of growth; pith of rhizome small, sometimes excentral; slightly odorous; taste distinct, very bitter, tingeing the saliva yellow.

3. Pieces without the bark should be rejected.

4. *Powder*—Yellowish-brown; composed chiefly of fragments of wood-fibers associated with a few tracheæ and medullary rays; wood fibers yellowish, scarcely giving any reaction with phloroglucinol T. S. and hydrochloric acid, and with large, simple, transverse pores; tracheæ chiefly with bordered pores, occasionally reticulate; medullary rays 1- to 12-cells wide, and in very long rows; starch grains single or 2- to 3- compound, the individual grains being irregularly spherical, 0.003 to 0.010 mm. in diameter and occasionally larger.

BISMUTHI CITRAS.

Bismuth Citrate.

1. Containing Bismuth Citrate [$BiC_6H_5O_7$= 397.04] equivalent to not less than 55 percent, nor more than 59 percent of pure bismuth oxide.

2. Bismuth Subnitrate, one hundred grammes .....100 gm.
Citric Acid, seventy-five grammes 75 gm.
Distilled Water, a sufficient quantity.

Mix the Bismuth Subnitrate and the Citric Acid with 400 cc., *four hundred cubic centimeters* of Distilled Water, and heat on a bath of boiling water, with frequent stirring, until a drop of the mixture yields a clear solution with ammonia water. Then add *five hundred cubic centimeters* of Distilled Water, allow the suspended matter to deposit, wash the precipitate, first by decantation, and afterwards on a strainer, with Distilled Water, until the washings are tasteless, and dry the residue at a gentle heat.

3. A white, amorphous or micro-crystalline powder, odorless and tasteless. Insoluble in water or alcohol, but soluble in ammonia water, and in solutions of alkali citrates.

4. When strongly heated the salt chars, and, on ignition, leaves a more or less blackened residue having a yellow surface, and soluble in warm nitric acid. This solution, when dropped into a large excess of water, occasions a white turbidity.

5. A solution of 1 gm. of Bismuth Citrate in ammonia water, when treated with hydrogen sulphide in excess, yields a black precipitate.

6. Deprive the filtrate from the latter of the excess of hydrogen sulphide by heating it; a cooled portion of the liquid boiled with an excess of lime water, yields a white precipitate.

7. Mix 0.01 gm. of the salt with 1 cc. of water, add 5 cc. of sulphuric acid, cool the mixture and then carefully pour over it 5 cc. of ferrous sulphate T. S. without mixing; no red or brown zone should appear within 5 minutes (*nitrate*).

8. Ignite 3 gm. of the salt, dissolve the residue in just a sufficient quantity of warm nitric acid, and pour the solution into 100 cc. of distilled water; a white precipitate is produced. Separate the filtrate from this precipitate and evaporate it on a water-bath to 30 cc., again filter the liquid and divide the new filtrate into portions of 5 cc. each; these should respond to the tests for purity described under *Bismuthi Subcarbonas* (See U. S P. IX), (*lead, copper, silver* and sulphates).

9. Three gm. of Bismuth Citrate, after ignition and treatment with nitric acid as di-

rected in the following test, should not respond to the Bettendorf's Test for *arsenic* as stated in the U. S. P.

10. Ignite 1 gm. of Bismuth Citrate thoroughly, in a porcelain crucible, and, after cooling, add 5 cc. of nitric acid to the residue, drop by drop, warming until complete solution is effected, then evaporate to dryness, and again ignite it; a residue of bismuth oxide should be left weighing not less than 0.56 gm., nor more than 0.58 gm.

11. *Average dose.*—0.125 gm.=125 milligrammes (2 grains).

BRAYERA.

Brayera. Cusso. Kousso.

1. The dried panicles of the pistillate flowers of *Hagenia Abyssinica* (Bruce) Gmelin (Fam. *Rosaceae*).

2. In rolls or flattened bundles from 25 to 40 cm. long, reddish-brown, each branch arising from the axil of a sheathing bract, and two rounded bracts at the base of each flower; calyx-tube top-shaped, pubescent, and subtended by a circle of five rigid, spreading, obovate, purple-veined bracts, which are larger than the five usually shrivelled and incurved calyx lobes; petals five, caducous and usually absent in the drug; carpels two; styles exserted, stigmas broad and hairy; odor slight; taste bitter.

3. The large stems should be rejected.

4. *Average dose.*—16 gm. (240 grains).

BROMUM.

Bromine.

1. It should contain not less than 97 percent of Bromine Br=79.92, and not more than 3 percent of chlorine. Bromine should be kept in glass-stoppered bottles in a cool place, the bottle being enclosed in a larger vessel with the space between filled with some compound capable of absorbing and combining with any Bromine vapors which might be given off.

Bromine is a heavy, dark brownish-red, mobile liquid, evolving, even at ordinary temperatures, reddish fumes, highly irritating to the eyes and lungs, and having a peculiar, suffocating odor, resembling that of chlorine.

3. Specific gravity: About 3.016 at 25° C. Boiling point, about 63° C.

4. Bromine is soluble in water, and freely soluble in alcohol, ether, chloroform and carbon disulphide.

5. On exposure to air or to heat, it is volatilized.

6. Bromine destroys the color of solutions of litmus and indigo, and imparts a yellow color to starch T. S.

7. On adding 5 cc. of Bromine to an excess of potassium hydroxide T. S., it should combine to form a permanently clear liquid, without the separation of oily drops (*organic bromine compounds*).

8. On shaking 10 cc. of a saturated aqueous solution of Bromine with a slight excess of reduced iron until it becomes nearly colorless, the filtered liquid, on the addition of 5 drops of ferric chloride T. S. and of 5 drops of starch T. S., should not assume a blue color (*iodine*).

9. Dissolve 10 gm. of potassium iodide in 25 cc. of distilled water, introduce the solution into a 100 cc. glass-stoppered graduated flask and determine accurately the weight of the flask and its contents. Add about 1 gm. of Bromine to the contents of the flask and determine its exact weight by noting the increase over the previous weighing and then fill the flask to the mark with distilled water. The titration of 25 cc. of this solution with tenth-normal sodium thiosulphate V. S., using starch T. S. as indicator and the calculation to the amount of Bromine originally taken, should show not less than 97 percent of Bromine (with not more than 3 percent of chlorine). Each cubic centimeter of tenth-normal sodium thiosulphate V. S. used corresponds to 0.007992 gm. of Bromine (Br) and 0.003546 gm. of Chlorine (Cl).

Each gramme of Bromine, U. S. P., (containing not more than 3 percent of chlorine) corresponds to not more than 129.831 cc. of tenth-normal sodium thiosulphate V. S.

CALCII PHOSPHAS PRÆCIPITATUS.

Precipitated Calcium Phosphate.

1. It should contain, when dried to constant weight, not less than 96 percent of Calcium Phosphate, $Ca_3(PO_4)_2$=310.29.

2. Precipitated Calcium Phosphate occurs as a white, amorphous or micro-crystalline, bulky powder, odorless and tasteless; permanent in the air. At an intense, white heat, the salt fuses without decomposition.

3. Almost insoluble in cold water; partly decomposed by boiling water, which dissolves out the acid salt; almost insoluble in acetic acid, except when freshly precipitated; easily dissolved by hydrochloric or nitric acid; insoluble in alcohol.

4. When moistened with silver nitrate T S., either before or after ignition, the salt

acquires a yellow color (distinction from *acid calcium phosphate*, which, after ignition, when moistened with silver nitrate T. S., remains white).

5. For applying tests of identity and of purity, shake 2 gm. of precipitated Calcium Phosphate with 20 cc. of distilled water, add nitric acid, drop by drop until solution is effected, and then add sufficient water to make the liquid measure 40 cc. While making this solution, no effervescence should occur on adding the acid (carbonate).

6. From a portion of this solution the salt is precipitated unchanged by a slight excess of ammonia water. Silver nitrate T. S. added in excess to this mixture and then acetic acid, drop by drop, until the excess of ammonia is neutralized, will cause the color of the precipitate to change from white to yellow.

7. From another portion ammonium molybdate T. S. precipitates yellow ammonium phosphomolybdate; the reaction is accelerated by a gentle heat, not exceeding 65° C.

8. Five cc. of the solution, acidulated with nitric acid to which 0.5 cc. of silver nitrate T. S. is added should result in the production of not more than a slight turbidity (chloride).

9. Five cc. of the solution, strongly acidulated with nitric acid, to which 1 cc. of potassium sulphate T. S. is added, should not result in turbidity upon standing 15 minutes, (*barium*).

10. An aqueous solution of Calcium Phosphate (1 in 20) obtained by shaking the salt with distilled water, adding hydrochloric acid, drop by drop, and heating until solution is effected, should not respond to the U. S. P. Time-Limit Test for *heavy metals*.

11. Five cc. of a solution of Calcium Phosphate, in diluted hydrochloric acid (1 in 25) should not respond to the U. S. P. Test for *arsenic*.

12. *Average dose.*—1 gm. (15 grains).

CALENDULA.

Calendula.

1. The dried ligulate florets of *Calendula officinalis* Linné (Fam. *Compositae*).

2. Florets, 15 to 25 mm. long, yellow or orange-colored, one- to three-toothed, the short hairy tube occasionally enclosing the remnants of a filiform style and bifid stigma; odor slight, somewhat heavy; taste slightly bitter, faintly saline.

3. *Average dose.*—1 gm. (15 grains).

CASSIA FISTULA.

Cassia Fistula.

1. The dried fruit of *Cathartocarpus fistula* Persoon (Fam. *Leguminosae*).

2. Cylindrical, 25 to 50 cm. long, about 20 mm. in diameter, chestnut-brown in color, on one side a longitudinal groove and on the other a smooth line or slight ridge, indicating the sutures; indehiscent, the cavity divided transversely into numerous compartments, each containing a reddish-brown, glossy, flattish-ovoid seed embedded in a blackish-brown sweet pulp; odor resembling that of prunes.

3. *Average dose.*—4 gm. (60 grains).

CATARIA.

Cataria. Catmint. Catnep.

1. The dried leaves and flowering tops of *Nepeta cataria* Linné (Fam. *Labiatae*).

2. Tops, when whole, 10 to 20 cm. in length, much branched, commonly crushed and broken; stems quadrangular, downy; leaves opposite, those of the stem petiolate 2 to 7 cm. long, rounded heart-shaped at the base, oblong, pointed at the apex, pale gray-green, soft hairy above, downy beneath, margin deeply crenate, floral leaves small, bract like; flowers in dense, interrupted spikes; flower small, calyx hairy, tubular, curved obliquely and equally 5 toothed, corolla whitish, dotted with purple, throat dilated, bilabiate, the upper lip erect, 2 cleft, leaves spreading, 3 cleft, the middle lobe largest, sometimes notched; stamens 2 pairs ascending under the upper lip, lower pair shorter. Odor faintly aromatic and mint-like; taste bitter, pungent, aromatic.

It should yield not more than 16 percent of ash.

CHIMAPHILA.

Chimaphila Pipsissewa.

1. The dried leaves of *Chimaphila umbellata* (Linné) Nuttall (Fam. *Ericaceae*), with not more than 5 percent of stem or other foreign substances.

2. Oblanceolate, 2.5 to 5 cm. long, 8 to 18 mm. broad, the upper portion coarsely and sharply serrate, acute or somewhat obtuse, the lower wedge-shaped and nearly entire; coriaceous, smooth and uniformly dark green on the upper surface, paler beneath, the veins being very prominent; odor slight; taste astringent and bitter.

3. *Average dose.*—2 gm. (30 grains).

(to be continued)

Editorial Notes and Announcements

E. G. EBERLE, Editor.....Columbus, Ohio

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers. Subscriptions and association dues should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

Requests for back numbers, and claims for missing numbers should be sent to the Editor.

Claims for missing numbers will not be allowed if sufficient notice has not been given of change of address, and in no case if received later than sixty days from the date of issue.

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REPRINTS.

If the request is made at the time copy is submitted, authors will be furnished with not to exceed 50 reprints, without cover, of papers accepted for publication in the JOURNAL.

Larger numbers of reprints will be supplied by the Stoneman Press Co. at the following prices, provided the order is received before the type has been distributed:

100 copies, 4 pages, no cover, $2.50, with cover, $4.50.
200 copies, 4 pages, no cover, $3.00, with cover, $5.50.
50 copies, 8 pages, no cover, $2.75, with cover, $4.50.
100 copies, 8 pages, no cover, $3.50, with cover, $5.00.
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Orders for reprints may be sent either to the Editor, or to the Stoneman Press Co., Columbus, Ohio.

PAPERS FOR THE ISSUES OF JUNE, JULY, AUGUST, AND SEPTEMBER.

As the papers that were read at the Detroit meeting of the American Pharmaceutical Association have nearly all been printed, the editor requests that contributions for the succeeding numbers of the Journal be submitted. It is not desired to interfere with the work of the Sections and doubtless papers read at the Branch meetings will contribute largely to our present needs.

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POISONS AND HABIT-FORMING DRUGS.

A digest of laws and regulations relating to the possession, use, sale and manufacture of poisons and habit-forming drugs enacted during 1913 and 1914, now in force in the United States. By Martin I. Wilbert, Technical Assistant, Hygienic Laboratory, United States Public Health Service. Reprint No. 240 from the Public Health Reports, Washington, Government Printing Office, 1915.

This pamphlet of 100 pages is designed as a second supplement to Public Health Bulletin No. 56, a Digest of Laws and Regulations Relating to Poisons and Habit-Forming Drugs, published by the Public Health Service in 1912. This second supplement presents a compilation of the laws and regulations enacted in thirty-two of the political divisions of the United States during 1913 and 1914 that are not included in either of the earlier publications. The extracts from and the references to these several laws and regulations have been arranged under the following headings: "Sale and Use of Poisons," "Sale and Use of Cocaine and Narcotics," "Drugs to be Announced on Label," "Poisons in Articles of Commerce," "Occupational Intoxications," "Methyl Alcohol," "Sale and Use of Intoxicating Liquors," "Practice of Pharmacy," and "Standards for Drugs."

The introductory portion, including 16 pages, reviews some of the current activities and presents a number of tables giving interesting data regarding the use and abuse of poisons and habit-forming drugs.

In discussing the sale and use of intoxicating liquors the suggestion is made that retail druggists might take advantage of the precedent established under the provisions of the Federal anti-narcotic law and secure legislation providing for a special license for the sale of alcohol for medicinal and mechanical

purposes. By extending the principle of registration and record embodied in the Federal anti-narcotic law to cover alcohol and alcohol containing medicines, it would be possible to differentiate between dealers in alcohol and alcoholic liquids for medicinal purposes and dealers who sell alcoholic liquids for beverage purposes. Such a provision could be made to furnish the necessary information to make prohibition and local option laws more effective, would practically preclude the sale of alcohol for beverage purposes under the guise of medicine and thus afford to officials in prohibition or local option territory an opportunity to enforce restrictive legislation in a way hitherto impossible. A distinct form of license with provisions to restrict the sale of alcohol to strictly legitimate channels would also serve to remove from pharmacists the suspicion of selling alcoholic liquids for beverage purposes and thus tend to re-establish the respect due to all honest members of our profession. To pharmacists who are interested in the promulgation of restrictive legislation this compilation of laws and regulations will be particularly interesting and useful. To the extent of the edition, the reprint may be had on application to the Surgeon General of the United States Public Health Service, and additional copies may be procured from the Superintendent of Documents, Government Printing Office, Washington, D. C., at ten cents a copy.

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Elementary Practical Chemistry, by J. E. Myers and J. B. Firth. The book is designed for medical students preparing for their first examination in practical chemistry. The authors say that the syllabuses of most of the medical examining bodies of the British Isles have been carefully considered, with a view of including herein all information necessary to meet their requirements.

The book is divided into four parts, as follows: (1) General Methods of Chemical Manipulation; (2) Inorganic Qualitative Analysis; (3) Inorganic Quantitative Analysis, including examples in both gravimetric and volumetric work; (4) Practical Organic Chemistry.

The authors have been very successful in condensing the various branches of chemistry in such a small volume, including at the same time most essential laboratory exercises. A purpose seems to have been to explain simple apparatus, and the chemicals have been selected with thought for cost and in smallest amounts. The explanations and directions are plainly stated. The little book conforms to the claims of the authors. J. B. Lippincott Company are the American publishers, representing Charles Griffin & Co. of London.

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Honorary President Geo. H. Schafer directs our attention to the following statement in the Chicago Tribune by Dr. W. A. Evans: "The Pharmaceutical Journal quotes a druggist as saying that for every ounce of laudanum dispensed on prescriptions, he sells at least a gallon to self-dopers. He says that this is the rule among drug stores." The reference is indefinite, the last clause is not only false but manifestly unjust. Charges of this kind should not go unchallenged. Dr. Evans and the Tribune should have considered the statement in connection with the efforts put forth by pharmacists to regulate the dispensing of narcotics.

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General Secretary William B. Day attended the banquet of the Pharmacy Department of Purdue University, Lafayette, Ind., May 6th. Aside from an enjoyable occasion, the Secretary found that a number of applications for membership in the American Pharmaceutical Association awaited him.

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L. C. Gill, formerly of Texas, now representing William R. Warner & Co. in Panama, has sent in his application for membership in the American Pharmaceutical Association.

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Bolivar Jurado, Professor of Chemistry and Physics in the National Institute of Panama, has been appointed Municipal Chemist for the City and District of Panama. Professor Jurado joined the Association four years ago; he has the possibility in mind that a Branch may be formed on the Isthmus.

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Every day I am more sure of the mistake made by good people universally in trying to pull fallen people up instead of keeping the yet safe ones from tumbling after them; and in always spending their pains on the worst instead of the best material.—Ruskin.

The Bulletin Board

NATIONAL COMMITTEE ON THE PHARMACEUTICAL SYLLABUS.

BULLETIN III.

A report on the affairs of the Committee to date.

In the treasurer's report made in August at Detroit and of which copies were sent to members of the committee on October 20, 1914, there appeared a balance of $246.95 due the printers, and a balance of $115.82 due Dr. Taylor for cash advanced. These debts were more than balanced by the value of the 426 copies of the Syllabus on hand and of the plates for printing the Syllabus. Dr. Taylor has requested that the balance due the printers be paid first.

The three parent organizations have sent the usual annual contribution of $25 each, and with these and receipts from the sale of the Syllabus $150 have been paid to the printers on account, leaving an unpaid balance of $92.95. It is estimated that all debts can be paid before the end of 1915.

A circular letter advertising the Syllabus was sent on December 1, 1914 to members of Pharmacy Boards and College Faculties throughout the United States. This resulted in the sale of about 50 copies. Some members of the Committee have sold 60 or more copies to their students in Colleges of Pharmacy. There are about 300 copies in stock, enough to last for a year or more, unless there is an unexpectedly large sale for them.

The storage and insurance of the plates for printing the Syllabus was referred to the Executive Committee with power. The Committee has had them transferred to the New York Education Building and insured at a total cost of $2.00 for the insurance.

Harry B. Mason, John Culley and Julius A. Koch have been reappointed to the Committee by the A. Ph. A., the N. A. B. P. and the A. C. P. F., respectively. Ernst O. Engstrom, of Pittsfield, Mass., Clarence O. Bigelow, of New York, and Turner A. Miller, of Richmond, Va., have resigned from the Committee, and the N. A. B. P. has appointed John W. Gayle, George C. Diekman and Mason C. Beebe in their respective places.

The Committee now has the following membership:

FROM THE AMERICAN PHARMACEUTICAL ASSOCIATION.

Term Expires

1915 George M. Beringer, Camden, N. J.
1916 William B. Day, 74 East 12th St., Chicago, Ill.
1917 Willis G. Gregory, Buffalo, N. Y., 344 Richmond Ave.
1918 Henry L. Taylor, Albany, N. Y., 2 Woodlawn Ave.
1919 Charles Caspari, Jr., Baltimore, Md., University of Maryland.
1920 Eugene G. Eberle, Dallas, Texas, P. O. Box 1539.
1921 Harry B. Mason, Detroit, Mich., P. O. Box 484.

FROM THE NATIONAL ASSOCIATION OF BOARDS OF PHARMACY.

1915 Charles Gietner, St. Louis, Mo., 203 South Broadway.
1916 William Mittelbach, Booneville, Mo.
1917 John W. Gayle, Frankfort, Ky., Ann St. and Broadway.
1918 William H. Rudder, Salem, Ind.
1919 George, C. Diekman, New York City, 115 West 68th St.
1920 Mason C. Beebe, Burlington, Vt., 75 Church St.
1921 John Culley, Ogden, Utah, 2479 Washington Ave.

FROM THE AMERICAN CONFERENCE OF PHARMACEUTICAL FACULTIES.

1915 Theodore J. Bradley, Boston, Mass., 70 St. Botolph St.
1916 Henry H. Rusby, Newark, N. J., 776 De Graw Ave.
1917 James H. Beal, Urbana Ill., 801 W. Nevada St.
1918 Charles W. Johnson, Seattle, Wash., College of Pharmacy, University of Washington.
1919 Clement B. Lowe, Philadelphia, Pa., 6630 Germantown Ave.
1920 William C. Anderson, Brooklyn, N. Y., 315 Greene Ave.
1921 Julius A. Koch, Pittsburgh Pa., Bluff and Pride Sts.

The sub-committees now have the following membership:

MATERIA MEDICA.

Henry H. Rusby, *Chairman*, Mason C. Beebe, George M. Beringer, John Culley, William B. Day, Clement B. Lowe, and William Mittelbach.

CHEMISTRY.

Julius A. Koch, *Chairman*, William C. Anderson, Theodore J. Bradley, George C. Diekman, John W. Gayle, Charles W. Johnson, Henry L. Taylor.

PHARMACY.

James H. Beal, *Chairman*, Charles Caspari, Jr., Engene G. Eberle, Charles Gietner, Willis G. Gregory, Harry B. Mason, William H. Rudder.

Corrections of any errors in the above lists should be sent to the Secretary at once as the lists will soon be printed.

WILLIS G. GREGORY, Chairman.
THEODORE J. BRADLEY, Secretary-Treasurer.

SECTION ON EDUCATION AND LEGISLATION.

Partial list of topics upon which papers are desired to be read at the San Francisco A. Ph. A. meeting under the auspices of the Section on Education and Legislation:

First—Prescription pricing. Is it desirable to consider a revision of the present method for pricing medicines sold upon prescription? Is it advisable to discuss this subject with medical societies with a view of overcoming the evil of dispensing by physicians?

Second—How can the individual druggist be helpful to bring about a correct public understanding of the druggist in his relationship to the public?

Third—Should Pharmaceutical Ethics be taught in a separate course, or can needs in this respect be fully served by teaching them incidentally?

Fourth—What special methods may be adopted by teachers in Colleges of Pharmacy to secure the best work from students without examinations?

Fifth—How can the druggist be helpful to assist the boards of health in educating the public regarding sanitation and the proper care of contagious diseases?

Sixth—Proprietary and Patent Medicines. Is it just to require publication of complete formula? Is the public welfare served by requiring publication, only, of potent drug content, and how in such case should potent drug content be defined?

Seventh—Teachers in Colleges of Pharmacy. Can the fitness of those who desire to teach in Colleges of Pharmacy be determined without regulation? Should there be a standard educational requirement for teachers in Colleges of Pharmacy?

Eighth—Can lack of preliminary education be overcome by supplementing the regular courses in Colleges of Pharmacy with such general educational courses as will most properly fit the student?

Ninth—Is the public welfare properly safeguarded by allowing the prescribing and distribution of medicines without record of some sort open to possible inspection by third persons and by the authorities?

Tenth—What general plan can be adopted to retain or to again establish a condition which will offer sufficient opportunity for the skilled pharmacist?

Eleventh—To what extent should Pharmacology be taught in Schools of Pharmacy?

Twelfth—Uniform marking systems and methods of grading work done by students in Schools of Pharmacy.

Thirteenth—How much time of a Pharmacy Curriculum should be devoted to Bacteriology?

Fourteenth—To what extent should Toxicology be taught in Schools of Pharmacy?

Fifteenth—How much time should be devoted to the study of Pharmacognosy?

Sixteenth—In what course and by what methods are drugs of the Organic Chemistry Laboratory best taught in Pharmaceutical Schools?

Seventeenth—Complete and detailed outlines of courses of study dealing only with Prescription Work.

Eighteenth—Should a library reading course be made a part of the curriculum of Schools of Pharmacy?

Many of the above topics, while not entirely new, should be timely and of deep interest to the teaching members of the Secton. Papers are, therefore, especially solicited from those engaged in the teaching of the various subjects mentioned. It should be remembered that, according to an established custom, the time required for the reading of a paper should not be more than fifteen minutes.

Additional subjects are solicited.

Papers should be in the hands of the Chairman or Secretary of the Section not later than the first of August.

R. A. KUEVER, Secretary.

Iowa City, Iowa.

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THE MODERN PHARMACY LAW.

The work of drafting a Modern Pharmacy Law by the Section on Education and Legislation of the American Pharmaceutical Association is progressing splendidly. Chairman Freericks has been able to secure appointments from forty-three state Pharmaceutical Associations and forty-three state Boards of Pharmacy. In other words, forty-three states have appointed subcommittees of two, one from the examining board and one from the state association, to co-operate in the work of drafting a Modern Pharmacy Law. These various subcommittees together in one body are known as the Voluntary Conference of the Section on Education and Legislation —each man having signified his willingness to serve and his interest in the work.

MEMBERS OF THE VOLUNTARY CONFERENCE.

Appointees of the State Boards.

W. E. Bingham, Tuscaloosa, Ala.
T. L. McCutchen, Yuma, Ariz.
Frank Schachleiter, Hot Springs, Ark.
Frank E. Mortenson, care Dundee Pharmacy, Pueblo, Colo.
John A. Leverty, Bridgeport, Conn.
Reuben M. Kaufman, Seaford, Del.
Charles D. Jordan, Monticello, Ga.
T. M. Starrh, Twin Falls, Idaho.
Frederic T. Provost, 1155 Wilson Ave., Chicago, Ill.
Jerome J. Keene, 1841 Talbot Ave., Indianapolis, Ind.
David E. Hadden, Alta, Iowa.
W. S. Henrien, Central and Main, Wichita, Kansas.
Addison Dimmitt, 4th and Chestnut Sts., Louisville, Ky.
E. H. Walsdorf, 900 Peters Ave., New Orleans, La.
Frank T. Crane, Machias, Maine.
J. Fuller Frames, 601 N. Gay St., Baltimore, Md.
Albert J. Brunelle, Room 22, State House, Boston, Mass.
Leonard A. Seltzer, 32 Adams St., W., Detroit, Mich.
R. L. Morland, Worthington, Minn.
T O. Slaughter, Waynesboro, Miss.
Charles Gietner, 203 S. Broadway, St. Louis, Mo.
W. R. Montgomery, Butte, Mont.
Herbert E. Rice, Nashua, N. H.
Lewis W. Brown, Englewood, N. J.
B. G. Dyne, LasCruces, New Mexico.
Warren L. Bradt, Albany, N. Y.
W. W. Horne, Fayetteville, N. C.
H. L. Haussamen, Grafton, N. D.
Edward Voss, Jr., 12th and Vine Sts., Cincinnati, O.
J. C. Burton, Stroud, Okla.
J. Lee Brown, Marshfield, Ore.
Lucius L. Walton, Williamsport, Pa.
Howard A. Pearce, 370 Elmwood Ave., Providence, R. I.
H. E. Heinitsh, Ph. G., Spartanburg, S. C.
F. W. Halbkat, Webster, S. Dak.
O. J. Nance, Jackson, Tenn.
W. H. Cousins, Dallas, Tex.
John Culley, Ogden, Utah.
Wilfred Root, Brattleboro, Vt.
W. L. Lyle, Bedford, Va.
D. R. Garrison, Connell, Wash.
Alfred Walker, Sutton, W. Va.
Edward Williams, Madison, Wis.

Appointees of the State Pharmaceutical Associations.

L L. Scarborough, Anniston, Ala.
Thos. E. Thorpe, 910 E. Willeta St., Phoenix, Ariz.
A. L. Morgan, Camden, Ark.
D. R. Rees, 601 Laguna St., San Francisco, Cal.
S. M. Aller, South Norwalk, Conn.
W. S. Richardson, 316 4½ St. S. W., Washington, D. C.
W. D. Jones, 107 E. Bay St., Jacksonville, Fla.
Herman Shuptrine, 229 Congress St., Savannah, Ga.
Rosco W. Smith, Mt. Home, Idaho.
Prof. C. M. Snow, Michigan Blvd. and 12th St., Chicago, Ill.
A. F. Sala, Winchester, Ind.
Geo. D. Newcombe, Creston, Ia.
C. C. Reed, Salina, Kansas.
Robt. J. Frick, S. E. Cor. 7th and Main, Louisville, Ky.
Jos. W. Peyton, 500 Texas St., Shreveport, La.
Jas. E. Hancock, 4 S. H. Ward St., Baltimore, Md.
Ernest O. Engstrom, 251 Wright's Block, Pittsfield, Mass.
John H. Webster, 933 Lafayette Ave., Detroit, Mich.
Charles H. Huhn, 98 Western Ave., Minneapolis, Minn.
A. S. Coody, Lucedale, Miss.
Prof. Francis Hemm, 3854a Arsenal St., St. Louis, Mo.
J. A. Riedel, Boulder, Mont.
Charles R. Sherman, 16th and Dodge, Omaha, Neb.
H. J. Duncan, Reno, Nevada.
Wm. C. Anderson, 277 Grand Ave., Brooklyn, N. Y.
L. W. McKesson, Statesville, N. C.
W. S. Parker, Lisbon, N. Dak.
Waldo M. Bowman, 319 Superior St., Toledo, Ohio.
A. W. Woodmancy, Oklahoma City, Okla.
S. C. Henry, 508 S. 61st St., Philadelphia, Pa.
Jas. O'Hare, 4 Benefit St., Providence, R. I.
F. M. Ellerbe, Ph. G., Jonesville, S. C.
D. F. Jones, Watertown, S. Dak.
Sam P. Harbin, Richardson, Tex.
Jas. L. Franken, 44 "J" St., Salt Lake City, Utah.

W. P. Warner, Vergennes, Vt.
Walter G. Williams, Charlotte Court House, Va.
Charles W. Johnson, care University of Washington, Seattle, Wash.
Walter E. Dittmeyer, Harper's Ferry, W. Va.
Edw. Kremers, University of Wisconsin, Madison, Wis.
Edwin C. Bean, Belmont, N. H.
Geo. M. Beringer, 5th and Federal Sts., Camden, N. J.
G. S. Moore, Roswell, New Mexico.

The Section on Education and Legislation has been very fortunate in securing for its Voluntary Conference not only pharmacists of the very highest type but men who are thoroughly qualified and have a great deal of interest in legislative work. The personnel of the Conference insures in a measure the success of the drafting of the Modern Pharmacy Law.

Chairman Freericks announces that there has been some delay purposely in this work in order that legislative work in the various states might not conflict. But now, with that mostly out of the way, the work of making the first draft of the Modern Pharmacy Law is to proceed as rapidly as possible. The Chairman suggests that representatives of the Board of Pharmacy and of the State Association get together, wherever possible, to agree upon what they deem advisable in the way of changes in their state laws. In states where the reprsentatives are not in close proximity to each other or are unable to get together for other reasons, a separate copy of their present law, with such notation of changes as they deem advisable, should be sent individually. Moreover, Chairman Freericks has requested that these various state laws with suggestions are to be sent in by the first of May since the sitfing and compiling and reconciling of all suggestions for changes for improvements will be a difficult and tedious task.

To facilitate matters each member of the Voluntary Conference has been asked for an expression of his opinion regarding the advisability of embodying in the draft of the Modern Pharmacy Law provisions which will cover in some manner the following special features:

First.—Is it deemed advisable that the Modern Pharmacy Law should contain a provision which would require the manufacturer of proprietary medicines to show on the label, the contents of potent drugs? This does not mean to require publication of formula, but simply means the publication of potent drug contents. And in such case how can potent drug contents be best defined?

Second.—Is it deemed possible to restrict the sale of proprietary medicines containing potent drugs to qualified people exclusively, or at least in all places where there are such qualified people within a certain distance? In such case what should be the distance prescribed from where qualified people are located, so as to permit beyond such distance the sale by unqualified people?

Third.—Should the manufacturer of proprietary medicines be required to have a registered pharmacist in charge, or should he, at least, be required to become licensed by the Board of Pharmacy for the manufacture of his proprietary medicines?

Fourth.—In view of the great difference of opinion which exists in different sections of the country regarding college graduation as a prerequisite for registration as pharmacists, is it possible to reconcile the strongly opposing views, so that in some manner progress might be secured in every state without coming in conflict with the opinion of those who do not favor the college prerequisite? To make this thought clear, take for instance the states in which college education is not today a prerequisite for registration as pharmacist, would it be feasible to allow such condition to continue without interference, and then in such states create an additional class to whom the college prerequisite would apply, as for instance to give such class the name "Registered Pharmaceutical Chemist"? Such Pharmaceutical Chemists would have the right to exercise all of the present-day functions of the Registered Pharmacist, and some additional functions which might subsequently be decided on, which in no manner would interfere with the privileges and prerogatives of the present-day Registered Pharmacist. Members of the Conference who are opposed to the prerequisite are respectfully asked not to become impatient with this suggestion immediately, but to please give it thorough consideration. It would seem that this would open the way for young men in every state to so qualify themselves under the laws of their state, so as to later on, if conditions made it necessary, be able to go into any and every state and become there registered as a Pharmacist. At the same time such inauguration

of a third class in states where the prerequisite for pharmacists is not desired, would gradually have a tendency to improve conditions in that respect, and yet not to the extent of conflicting with the views of those who are today opposed to the prerequisite.

Fifth.—Should there be a provision to govern those who would be privileged to act as teachers and instructors in Colleges of Pharmacy? Today it seems that most anyone may teach pharmacy, and its allied subjects, the measure of fitness being left with the person who would teach. The thought has been expressed, that those who would teach should in some manner be required to first prove their qualification.

Sixth.—Should the law prescribe requirements for Colleges of Pharmacy which they would need to meet in order to be recognized by Boards of Pharmacy?

Seventh.—Should the law require all who would dispense medicines to make and keep a record of medicines so dispensed? For instance, third persons can know only what medicines have been given to a patient, when the medicines have been secured from a pharmacist on a physician's prescription. When the physician dispenses his own medicines to his patients, it is altogether impossible for third persons to know what such medicines may have been. It seems in keeping with the public welfare that there should be opportunity in every case to know what medicines may have been given to a patient. The question is, therefore, whether it be deemed advisable that when physicians dispense their own medicines, they be required to make a record of such dispensing.

R. A. KUEVER, Secretary.

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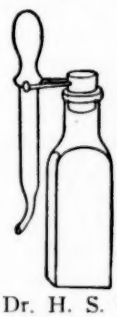
MEDICINE PIPET HOLDER.

Various holders and bottle attachments for medicine pipets have been devised, but are seldom available when needed.



An efficient holder can be improvised in about ten seconds' time by the use of two common brass pins. The pins are inserted deeply into the cork, parallel with each other and nearly in contact. They will possess spring enough to hold securely an ordinary medicine pipet as shown in the accompanying illustration.—Dr. H. S. Reynolds, New Haven, Conn., in Journal A. M. A.

Proceedings of the Local Branches

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the Editor on the day following the meeting, if possible. Minutes should be *plainly* written, or typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.

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PHILADELPHIA.

FEBRUARY REVIEW OF PHARMACEUTICAL LITERATURE.

It is apparent from a survey of the pharmaceutical journals published during the month of February that original work along pharmaceutical lines has been confined chiefly to researches in pharmaceutical chemistry and botany.

The greater part of the literature published during the month is devoted to drug store business problems and other articles of general interest, either copied or original.

The following abstracts are from original articles appearing in the February issues of the publications mentioned.

Journal of the American Chemical Society.

G. A. Linhart (page 258) separates mercuric chloride from benzene quantitatively by shaking out the benzene solution with a solution of sodium chloride and precipitating the $HgCl_2$ from the latter with hydrogen sulphide. This method is stated to be well adapted for quantitative work.

Curtman and Wikoff (page 298), in a paper on "The Detection of Bromides in Presence of Thiocyanates, Cyanides and Ferrocyanides" point out that the presence of the latter substances interferes in the detection of bromides by the ordinary methods, and that from their experiments it is evident that thiocyanates offer the greatest and ferrocyanides the least interference.

A rapid method, taking about 15 minutes, and showing trustworthy results is given,

whereby 2 mgm. of bromine can be detected in presence of 500 mgm. of each of the interfering substances. In the method proposed the interfering substances are precipitated in the form of their cuprous salts by first treating the solution containing them with a saturated solution of SO_2 and then with double normal $CuSO_4$ in excess. The precipitate is separated by filtration and the filtrate is boiled to remove excess of SO_2 and then treated with triple normal H_2SO_4 and 1% $KMnO_4$. Carbon disulphide is added and by shaking out, the presence of Bromine is established.

Another paper of pharmaceutical interest in this issue (page 323), but too lengthy and technical for short abstracting is the one on "Chlorohyll," by Richard Willstätter.

Isolation of chlorphyll and separation into its components; the carotinoids, comparative investigation of leaf pigments and the question of chemical constitution of chlorophyll are considered.

Journal of Industrial and Engineering Chemistry.

Satow (page 113) has isolated an insoluble, naturally yellow, mordant coloring matter said to be identical with "myricetin," from the bark of myrica rubra, and by converting this substance into azo, sulfide and nitro compounds was able to produce other useful soluble dyestuffs.

Journal American Pharmaceutical Association.

The papers and proceedings of the section on practical pharmacy appearing in the current issue are all worthy of attention. In a contribution entitled, "The Relation of Pharmacy to Medicine," A. H. Dewey makes the following interesting distinction between the commercial pharmacist and the professional pharmacist:

"The Commercial pharmacist practices a kind of pharmacy which is wholly independent of the medical profession, while the professional pharmacist practices a kind of pharmacy which is wholly dependent upon the medical profession."

American Journal of Pharmacy.

The article on natural and synthetic camphor by Percy A. Houseman is very interesting. The author calls attention to the commercial importance of natural camphor to the producing countries, and then takes up its extraction and refining, properties, uses and chemical constitution. Synthetic camphor manufacture is also discussed and the author believes the future of this industry to be quite uncertain, due to the fluctuation in the price of natural camphor and the variation in price and supply of turpentine.

In a paper on Arsenic antidote, by J. W. England, attention is called to the importance of the suggestion for using magma magnesia N. F. in place of magnesium oxide in the preparation of the official arsenic antidote.

Western Druggist.

A practical paper in this issue (page 34) is the one by P. J. Jacobs entitled, "Preparing a Proof of Loss by Fire," in which attention is called to the importance of druggists being prepared to face loss by fire and having all the necessary information tabulated when claiming insurance. A hypothetical case is used for purposes of illustration, and all necessary figures are given.

Practical Druggist.

Walker and Klein (page 27) describe a test which aids the diagnosis of cancer and sarcoma. The urine of the patient is treated with tenth-normal iodine solution and HCl, and the color obtained is compared with a previously-prepared standard. A marked difference in color from that of the standard is said to indicate an advanced state of the disease, while slighter color variations indicate incipiency or less advanced stages.

Bulletin of Pharmacy.

An interesting contribution to historical pharmacy may be found on page 68, under the title, "What the Drug Business has Come From."

Prescription pricing is the title of a paper found on page 80, and presents the views of several druggists on the prices that are and should be received for medicines by the retailer.

National Druggist.

An editorial on "The Ownership of the Prescription" states that "the right to possess it lies consecutively with the individuals in whose hands it reposes at the various stages of its career." This would seem to make the pharmacist the final and permanent possessor of the prescription.

Some good suggestions, which are also

timely, are contained in the article on "Easter Trade," by Edgar L. Mills (page 50).

Spatula.

"Pharmacy in Europe" is the title of an interesting story describing a traveler's experiences in the pharmacies of England, Holland, Sweden, Norway, Denmark, Germany, Belgium, France, and Italy.

Pharmaceutical Era.

Felix J. Koch (page 57) discusses in detail the sources and cultivation of our saffron supply and the government investigations with regard to its adulteration.

Chemist and Druggist.

Pharmacists' activities in the European war are receiving considerable attention in the pharmaceutical journals of the various belligerent nations.

It is significant to note that few serious epidemics are reported. The Chemist and Druggist (page 258) reports that the word Aspirin has been removed from the British Trade-marks Register, so that anyone may use this name.

The various local associations are discussing the revision of the British Pharmacopœia and many adverse criticisms are being made. English pharmacists, speaking generally, are not satisfied with the revision and the dissatisfaction is partly explained by the fact that pharmacists have had no part, officially, in the revision.

An interesting brief (page 201) regarding antimony brings out that there is ground for believing that a good deal of the metal contracted for shipment to the U. S. from Europe will not be shipped, owing to the present scarcity.

Canadian Pharmaceutical Journals are protesting against the war tax on proprietaries which has recently been levied by the Canadian government.

The Canadian Pharmaceutical Journal, in commenting on the tax says, "Why tax the baby's cough syrup and pass over the young man's favorite brand of chocolates?"

The tax according to this journal is from 10 to 12% specific, taking away practically the entire retail profit on patent medicines.

American Druggist.

An article by Wilhelm Bodemann (page 48) and editorial comment sound a note of warning against making graduation from a high school a pre-requisite for entrance to colleges of pharmacy and ultimate registration. An article (page 52) describing methods of collecting outstanding accounts and including a set of letters used for requesting payment without hurting the feelings of the debtor should be of considerable interest to the retailer who has a credit business.

Midland Druggist.

An editorial (page 47) on "Accuracy in Pharmaceutical Spelling" criticises board members and teachers for laxity in regard to spelling pharmaceutical names and urges preceptors to insist on proper spelling by their apprentices.

Merck's Report.

A paper on sugar cane by R. I. Geare (page 28) of Washington, D. C., takes up some of the requirements for the proper cultivation of this plant in the United States and emphasizes particularly the use of the proper kind of fertilizer to furnish potash, phosphates and nitrogen, which are essential to its successful growth.

The Druggists Circular.

Spurious Drugs (page 87) is the title of a paper by John Uri Lloyd, dealing with adulterants found in some crude drugs. The author takes the attitude that ignorance on the part of collectors and others is often responsible for the admixture of crude drugs having similar characteristics.

Proper instruction of those in charge of collecting drugs and remuneration corresponding to the responsibilties involved, are offered as suggestions for preventing this unintentional adulteration.

In conclusion, the author states that the American drug market presents a deplorable uncertainty that can be overcome only by the means just suggested and can be materially improved by employing experts to purify our native materia medica.

ROBERT P. FISCHELIS, B. Sc., PH. D.

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The regular monthly meeting of the Philadelphia Branch of the American Pharmaceutical Association was held on Tuesday evening, April 13, at the Medico-Chirurgical College. In the absence of the president and vice-president, Prof. C. H. LaWall was ap-

pointed chairman pro tem and he called the meeting to order at 8:30 p. m. The minutes of the last meeting were read and approved.

The committee, appointed at the March meeting to audit the treasurer's accounts, reported them to be correct.

Under the head of new business the following communication was read:

April 12, 1915.

Secretary Philadelphia Branch, A. Ph. A.:

Dear Sir—Inasmuch as the time which elapsed between sending the reply to the Pearson article, to the Council of the A. Ph. A., and its receipt from them, was so great, and taking into account the number of adverse comments which were received regarding it, I feel that it should be withdrawn and do so move, with the approval of the committee to whom was entrusted the task of drafting it. Very truly yours,

(Signed) C. H. LAWALL.

Mr. Apple moved that the reply to Pearson's Article—Pills and Piracy—be laid on the table. The motion carried.

The program of the evening was then taken up and Mr. Joseph Rosin read Dr. Rosengarten's paper on "The Standards and Tests for Organic Chemicals in the U. S. P. IX."

Mr. George M. Beringer gave a comprehensive survey of the new features of "The Extracts, Fluidextracts and Tinctures of the U. S. P. IX."

"The Current Review of Pharmaceutical Journals" was presented by Prof. E. Fullerton Cook, after which the meeting adjourned.

J. ED. BREWER, Secretary.

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CHICAGO.

The April meeting of the Chicago Branch of the American Pharmaceutical Association was held the evening of April 26 at the Kuntz-Remmler restaurant, following a complimentary dinner to Professor Joseph Price Remington. A large attendance was had.

James H. Wells reported for the legislative committee that the various bills before the Illinois Legislature amending the Pharmacy law were making some progress, but stated that, because of the greatly overcrowded condition of the legislative calendar, much pressure would have to be brought to bear to get a hearing and vote on the pharmacy amendments.

William Gray reporting for the Committee on Practical Pharmacy read a very interesting instructive paper on the preparation and use of Bang's Solution for the determination of sugar in urine. Mr. Irwin A. Becker also presented a valuable paper entitled, "Some Observations on the new British Pharmacopœia." Mr. Becker discussed at some length the test for free salicylic acid in aspirin on acetylsalicylic acid and by practical demonstration showed the inaccuracy of the test as stated in the British Pharmacopœia.

Charles Orr, employed as pharmacist by the Illinois Central Railroad Company, read a most interesting paper on "The Opportunities of a Pharmacist in Railway Hospital Work."

The three papers were well received and by motion were ordered presented to the Publication Committee of the Association for publication in the Journal, if desirable.

Professor Remington was enthusiastically received after a characteristic introduction from President Craig. Professor Remington presented various phases of the work in the new U. S. Pharmacopœia, especially the subjects of liquid petrolatum, whiskey, patented chemicals, adrenalin, etc. He exhibited the page proof of the first hundred pages of the new book and named October as the month in which he expected it to be on the market.

The discussion that followed was most instructive and the reminiscences most entertaining. Professor W. B. Day moved a vote of thanks and Mr. George P. Englehard offered a touching tribute to Professor Remington's character and his great gifts to pharmacy.

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BALTIMORE.

The April meeting of the Baltimore Branch of the American Pharmaceutical Association was held Wednesday evening, April 21, in the Hynson, Westcott & Company assembly room at Charles and Franklin Streets, with President E. W. Hodson in the Chair.

The regular program included:

Some Notes on Glucosides, by Dr. Herman Engelhardt.

Some Dispensary Observations, by Miss Carrie G. Mossop.

Little Journeys Through the Journals.

Doctor Engelhardt read a paper on the "Synthesis of Glucosides," which was very interesting and instructive and of considerable educational value.

By the vote of the branch it was referred to the Journal for publication as a paper

coming through the branch to the Association.

A brief synopsis follows:

SYNTHESIS OF GLUCOSIDES.

After discussing the properties of glucosides and the action of the enzymes in general, a few methods for isolating glucosides were given. The earlier work done by Schützenberger, Michael, Schiff and Fischer was discussed and finally the important work done by Bourquelot and his associates and pupils was reviewed.

Bourquelot's method for synthesizing the glucosides differs entirely from the methods applied by the above-mentioned investigators and depends on the fact that enzymes have the power not only to hydrolize glucosides, but also to reconstruct them from the products of hydrolysis. Some of the glucosides prepared syntheically by the last mentioned method were then discussed. Finally the great importance which the enzymes and glucosides have in biochemical synthesis was mentioned and also the importance of synthesis and hydrolysis for the life of the plants.

Miss Mossop read a paper on "Dispensary Observations," which she prefaced by remarking that Doctor Hynson once told us that the pharmacist is a kind of triangle, the three sides being professional, commercial and social, and that she had chosen one division of the social side and would endeavor to tell of some of her observations of human nature at the free dispensary.

Although her paper was not along the scientific of ethical lines indicated in the program, yet it certainly did indicate that she had absorbed and observed as she went along and that her experiences in her sociological work among the classes met with in dispensary patients, were well worth recording and reading.

They were very much enjoyed and they could be printed in the Journal to edify those of us who have not been introduced to this side of our calling.

Extremes in appearance were cited in which some endeavored to "put up as good a front" as possible, and others to appear extremely shabby, some men going to the trouble to remove collar and tie outside of the dispensary door and hide them in their pockets.

The dependence of the genus male of the Ethiopian clan on the "Female of the Species" is strikingly brought out there, as she invariably brings him and tells all of his troubles, he saying nothing unless asked or prompted by her.

The gratitude of some is shown in their kissing the hands of all who have served them, in bringing little presents of flowers and in many other touching ways.

Some are grafters and want something besides what is prescribed and sometimes will offer half the charge for a regular prescription to get it and occasionally, even more.

Some of the journals were considered and some of the articles were discussed.

A book on prescription writing, given as a premium by one of the pharmaceutical journals was introduced by Doctor Hynson as one containing horrible prescriptions and worse pharmacy.

During the discussion which followed, the necessity of education along the lines of pharmaceutical Latin was emphasized and the disparity between the "Dog Latin" of American pharmacy and American prescriptions and the good Latin of that of Europe was brought out.

The same difference was pointed out between the Latin of the prescriptions appearing in American pharmaceutical and American medical journals, although the Latin of the average prescription is awful.

The discussion resulted in a motion being carried that "It is the sense of the Branch that in an effort to improve the Latin of prescriptions, that the pharmaceutical journals should edit the prescriptions appearing in them."

In calling back to a physician, a prescription received over the telephone, it was felt that, unless the pharmacist knew his Latin, it would be best to repeat it in good English rather than in bad Latin.

WM. J. LOWRY, JR., Secretary.

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NEW YORK.

Minutes of the regular meeting of the New York Branch of the American Pharmaceutical Association held in the New York College of Pharmacy Building, March 8, 1915, President Roemer in the Chair.

Minutes of the preceding meeting were adopted as read.

Treasurer's Report: Read and received with thanks.

The member of the Council, Mr. McEl-

henie was not present and no report was received.

REPORTS OF COMMITTEES.

Membership: Chairman Rehfuss being absent no report was received.

Legislation and Education: Chairman Anderson presented a very detailed and interesting report concerning local, state and national legislative matters. Among other things he called attention to the ruling of the Commissioner of Internal Revenue that druggists must keep a record of narcotics used in manufacturing preparations, claiming that this was beyond the Commissioner's authority. Novocain is exempted from the provisions of the act.

Attention was directed toward the various bills introduced at Albany that have any bearing upon the drug-trade.

Fraternal Relations: Chairman Berger absent. No report.

Progress of Pharmacy: Chairman Diekman read an interesting report presenting numerous abstracts from various publications. Calmonal, a calcium-bromide-urethan compound is recommended as a hypnotic without narcotic effect. Durolit is a lacquer prepared according to a patented process and is said to resist hot solutions of alkalis. Normal opium is the name suggested for opium containing definite quantities of morphine, codeine, narcotine and meconic acid. Professor Kobert-Rostock states in the Phar. Zentralhalle that he considers artificial camphor free from poisonous properties. A long list of specialties were also included in the report.

A communication from Mr. C. A. Mayo was read requesting that the Branch send delegates to the N. Y. Pharmaceutical Conference and asking for financial support. The communication was received and motion carried that the president appoint three delegates.

A communication from President Roemer suggesting semi-monthly meetings was received and the secretary was ordered to embody the suggestion in the notices for the next meeting.

President Roemer presented for membership the name of S. Meyer of College Point, and he was duly declared elected.

Several representatives from the Board of Health and the Bureau of Standards were present and a discussion of the "Standardization of Pharmaceutical Graduates" resulted in the president being empowered to appoint a committee to further consider the matter. The resolution follows:

Be it resolved, that the New York Branch of the American Pharmaceutical Association approves of the spirit of the suggested standardization of graduates as proposed by the Bureau of Standards of the New York Board of Estimate and Apportionment and that the president appoint a committee of three to discuss the matter with the representatives of the Bureau.

Dr. R. P. Fischelis then read a paper entitled, "A Plan for a More Serviceable A. Ph. A. Journal." The paper called for considerable favorable discussion and it was referred to the Committee on Publication with the approval of the suggestions by the Branch.

Professor Otto Raubenheimer then read a paper entitled, "A Review of the British Pharmacopœia." Owing to the late hour, Prof. Raubenheimer limited his remarks. After calling attention to various changes the author expressed the opinion that the work was not as good as it ought to be.

The attention of the Branch was directed to the fact that the U. S. P. Revision Committee had decided to adopt the term "mils" in place of "cc.," and the following resolution introduced by President Mayo of the parent body was unanimously adopted:

Be it resolved, that the New York Branch protests against the adoption of the term "mils" for "cc.," and that the Chairman of the Revision Committee of the U. S. P. call for another vote on the question.

JEANNOT HOSTMANN, Secretary.

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PITTSBURGH.

At the meeting of the Pittsburgh Branch held Friday evening, April 16th, the members and visitors were given a rare treat in listening to the paper presented by P. Henry Utech, of Meadville, Pa., on the subject, "An American Pharmacist in Germany," based upon his experiences as a member of the party of pharmacists that visited Europe last summer under the auspices of the German Apotheker Society, of New York, which was suddenly terminated when about half the itinerary had been covered on account of the breaking out of the war. Mr. Utech covered more than one hour, every minute of which was filled with interesting and instructive, as well as amusing accounts of men and things pharmaceutical encountered on his travels. We

would be glad to give a full reproduction of the paper in these columns, but space, and the rules of the American Pharmaceutical Association, forbids, so we must content ourselves with but a brief epitome:

"The German Apotheker is proud of his profession, which carries with it a certain prestige and distinction, and endeavors always to the best of his ability to live up to the precepts and principles which his predecessors have handed down to him—principles which serve as a beacon light on his high road to success. To become an Apotheker in Germany one must undergo a long, tedious process of study and training; he must assure the government of his fitness through a thorough examination. When an early member of the famous family of Merck, Johann Justus Merck entered upon his four years of apprenticeship in the Royal Court Pharmacy in Dresden, in 1741, among his other duties the following was exacted of him: "He was required above all things to respect God and His holy word, to hear the latter with pleasure and to pray morning and evening. He was to have no money in his possession and to keep free from all frivolous and luxurious habits."

In Darmstadt is located the plant of these chemical manufacturers known throughout the world—Merck's. This business was founded in 1668 as a small pharmacy by Frederick Johann Merck, this pharmacy has ever since been in continuous possession of the Merck family, and is still in operation under the name of "The Engel Apotheke," conducted by Dr. Emanuel August Merck, who is also one of the joint owners of the extensive chemical plant. The present plant occupies an area of about 75 acres, and is situated one mile north of the city of Darmstadt, and consists of 204 separate buildings. In equipment it affords a striking illustration of every latest appliance that man's ingenuity has evolved, and every possible protection is provided for its employes. It is surrounded by a colony of model dwellings for its working people, has an electric station, gas plant, and water works. There are old age pensions, allowances for heads of families during illness and a small donation of money each time a new member arrives in the family.

Since the European war has begun we as pharmacists have been brought face to face with the stern realization of our dependence upon the warring nations for many of our supplies. One of our American drug journal editors has called attention to the fact that "we as a nation consume more and produce less drugs than any other country on the globe."

Among the many peculiarities that Mr. Utech noted that differ from usage in this country are that prescriptions are always returned to the patient after filling; all liquids are dispensed by weight; graduates are but rarely met with; poisons are kept in closets with always more than one and frequently as many as three locked doors to open before gaining access; patent medicines are sold only under a special license; drogeries handle toilet articles, sundries, soaps, perfumes, rubber goods, etc., but are not permitted to dispense drugs nor compound prescriptions, that being the business of the apotheker in which he is protected by the government, and it permits of no competition up to a population of ten thousand.

At the conclusion of Mr. Utech's paper, Dr. J. A. Koch, who spent six months in Dresden as a student, gave some interesting and amusing instances of famous men and noted places which Mr. Utech had mentioned in his paper. In all this was the most enjoyable evening's entertainment the Branch has ever enjoyed.

Mr. Campbell emphasized the importance of the Question Box feature of the Branch meetings, and said more use should be made of it by pharmacists with problems to solve, and presented several questions himself covering some of the proposed additions to the new pharmacopœias which he proposed be embodied for discussion in the program for the May meeting.

Dr. A. F. Judd requested the members to secure for him samples of "Cream Tartar" from different drug stores, as well as groceries, to assist him in work he has in hand covering conditions as to quality and prices in the open market of that article.

During the meeting, Dr. J. H. Wurdack announced the sad news that Dr. Emile F. Krapf, whose lecture on Radium delivered at the February meeting and which had attracted wide attention, had died on April 9th, after a short illness with pneumonia. Dr. Krapf was a young man and gave promise of having a brilliant future.

B. E. PRITCHARD, Secretary.

SAINT LOUIS.

Dr. J. A. Warner gave a stereopticon lecture on "The Manufacture of Antitoxic Sera," and Dr. J. C. Falk a talk on the subject, "Why Physicians Should Prescribe," before the April 16th meeting of the Saint Louis Branch of the American Pharmaceutical Association.

The following participated in the discussion: J. J. Hoelscher, E. A. Sennewald, Dr. Gustav Rehfeld, G. T. Lehmberg, J. A. Morlan, Julius C. Hoester, J. W. Mackelden, C. H. Bierman, Grace Steingardt, Lydia F. Batdorf, Gustav Kring, Dr. W. P. Henrich, J. M. Good, Herman J. Couch, J. T. Walsner, Chas. H. Horton, Dr. J. C. Falk, W. K. Robinson, W. E. Crampsey, Dr. J. A. Warner, C. T. Buehler, C. Francis Sennewald, Dr. H. M. Whelpley, Chas. Gietner.

General Secretary William B. Day, Treasurer H. M. Whelpley and Editor E. G. Eberle spent several days in St. Louis discussing Association matters, and more particularly with regard to the Journal.

Monday noon, April 5, Dr. Whelpley guided the other two members of the delegation towards a place where strength might be developed by partaking of food. Instead of a quiet lunch the visitors were agreeably surprised by a company of about forty St. Louis pharmacists; with few exceptions, members of the local Branch, and the others so near, that the San Francisco meeting will not pass by without their accession. The hour was passed socially while enjoying the surprise dinner. At night, Dr. H. M. Whelpley, Professor Day and E. G. Eberle were guests of Dr. Charles E. Caspari at the University Club.

JULIUS C. HOESTER, Secretary.

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CINCINNATI.

The regular monthly meeting of the Cincinnati Branch, A. Ph. A., was held April 15, 1915, at Lloyd Library. President E. H. Thiesing presided.

The reading of the minutes of previous meetings and the reports of committees having been disposed of, the President introduced Mr. Louis Werner, Jr., who gave a very interesting talk on "New Organo-Metallic Compounds," in which he demonstrated the formation of many compounds; such as Acetphenetidin from the Benzene Series, the formation of Salvarsan and many others. An interesting discussion followed in which Mr. F. W. Weismann, Prof. C. T. P. Fennel and others participated. Mr. Weaver was warmly commended by the members for his excellent paper, after which President Thiesing introduced Professor John Uri Lloyd, who spoke on "Lloyd's Alkaloidal Reagent," giving experimental demonstration. He demonstrated his reagent: "Hydrous Aluminum Silicate," for example with powdered Sanguinaria, treating same with acidulated water, dividing the filtrate into two portions and treating one portion with the reagent; the colorless filtrate of which shows an absolute absence of the active principle of sanguinaria, giving positively no result with Mayers' Reagent for alkaloids. He shows how all alkaloids may be removed by Lloyd's Reagent. The Professor's investigations have extended over a period of forty years, and he believes that this is a beginning of a new era of organic and analytical chemistry, laying particular stress upon the experiments in Colloidal Chemistry, so well illustrated by Dr. Oswald and others.

The discussions which followed Professor Lloyd's lecture was participated in by Mr. Chas. G. Merrell, Professor C. T. P. Fennel, Professor Theo. D. Wetterstroem, and others, one claiming "it is a matter of adhesion, that charcoal may have the same adsorption," or, again, "I do not believe in colloidal action, but in catalytic action," but all agreed upon the absolute practical results shown by Lloyd's Reagent.

Professor Lloyd was tendered a rising vote of thanks by his appreciative auditors.

CHAS. A. APMEYER, Secretary.

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NORTHWESTERN BRANCH.

The March meeting of the Northwestern Branch of the American Pharmaceutical Association was held at the Nicollet Hotel, Minneapolis, Thursday evening, March 18, 1915. The meeting was preceded by a dinner and a brief business session of the Minneapolis Retail Druggists' Association. As this was the annual meeting of the Branch, reports were received from the various officers, and the annual election took place: Secretary Newcomb reported briefly upon the work of the past year and referred to the sixteen

new members acquired by the branch since the last annual meeting.

The Nominating Committee reported the following names as nominations for office during the coming year: President, A. D. Thompson, Minneapolis; Vice President, Truman Griffen, Minneapolis; Secretary-Treasurer, E. L. Newcomb, Minneapolis; Executive Committee, F. A. U. Smith, St. Paul; F. M. Parker, St. Paul; S. W. Smetana, Hopkins; A. J. Kline, Minneapolis. The names as presented by the committee were unanimously elected.

By motion the Branch voted an assessment of $1 upon each active member to defray the expense of the secretary in connection with the sending out of meeting notices, etc.

Communications were read concerning the preliminary report of the Transportation Committee and copies of the report were distributed among those present.

The Branch concurred in the resolution concerning the death of Mr. Frank W. Klenert, adopted earlier in the evening by the Minneapolis Retail Druggists' Association.

The regular program for the evening, which was carried out, was as follows:

1. The Assay of Spiritus Aetheris Nitrosi and Acidum Hydrochloricum Dilutum, with demonstrations. By Prof. G. Bachman.

2. A continuation of the discussion on Spirtus Aetheris Nitrosi, Acidum Hydrochloricum Dilutum, etc., begun at the Scientific Section meeting of the Minnesota State Pharmaceutical Association. The best methods for the preparation and preservation of the above named products.

3. Latest rulings on the Harrison Anti-Narcotic Law.

4. The State Anti-Narcotic Bill and its provisions.

Professor Bachman's demonstration of the assay of Spirit of Nitrous Ether was highly appreciated by the members present and elicited many questions. The apparatus designed by Prof. Frank X. Moerck was exhibited and its use demonstrated. Prof. Bachman submitted the following concerning this preparation and urged each pharmacist to give strict attention to this preparation in order that the physician may obtain the result which he has a right to expect:

1. Do not make up more than the quantity sold within a month. Buy the concentrated Spirit, preferably in hermetically sealed tubes. The contents of one of which will make a pint of Sweet Spirit of Niter.

2. Keep the Spirit in completely filled bottles in such sizes as are usually called for by the trade and these stored in a cool place protected from light.

3. Air space in the bottle has much to do with the decomposition of the Spirit.

4. Do not expose the Spirit to sunlight as this is one of the chief causes of decomposition.

5. Amber colored bottles afford good protection.

The paper by Prof. Bachman was discussed by Messrs. Griffen, Frost, President Thompson, Dean Wulling, Schmidley, Kline, Danek and others. Mr. F. A. U. Smith explained in detail the reason why amber colored bottles afforded a protection to the substances contained therein, which are susceptible to the actinic rays of light. Attention was called to the indiscriminate use of blue bottles for preparations which should receive the greatest protection from chemically active light rays.

Following the discussion of Sweet Spirit of Niter, the matter of a joint meeting between Twin City physicians and Twin City pharmacists was brought up and after discussion, the following motion was unanimously passed: "Moved by Dean Wulling, seconded by Mr. Frost, that the secretary be instructed to communicate with the chairman of the Minneapolis R. D. A. and the chairman of the St. Paul R. D. A. requesting each to appoint one pharmacist, who with a member of the Northwestern Branch, A. Ph. A., to be appointed by the president, are to constitute a committee of three to bring about not later than early May, a joint meeting of pharmacists and physicians of Minneapolis, and later a joint meeting of pharmacists and physicians of St. Paul, the committee to have power to make necessary arrangements."

Mr. John P. Jelinek, chairman of the Legislative Committee of the State Association, spoke on the state anti-narcotic bill and its provisions and urged the support of the Branch for the passage of the bill by the 1915 session of the Minnesota legislature. After some discussion, the bill was endorsed by the Branch.

About 50 attended the dinner and meeting.

NASHVILLE.

The regular meeting of the Branch was held at Bloomstein's Hall, March 17th. In the absence of President E. F. Trollinger, Vice-President J. O. Burge presided.

Besides the regular members, there were in attendance a number of physicians, pharmacy students and attorneys who had been invited to hear a discussion of several bills relating to pharmacy, which have been introduced at the present session of the Legislature.

Dr. Ruddiman reported that the committee appointed at the last meeting had held a satisfactory conference with Dr. L. P. Brown in regard to amending the State anti-narcotic law.

W. R. White then made a report for the Legislative Committee which showed that bills had been introduced to allow persons who had held permits for four years to become Registered Pharmacists without examination by the Board; to require the dispensing of poisons in triangular bottles only; to regulate the sale of patent and proprietary medicines and toilet articles by requiring registration of the ingredients and therapeutic claims with the State Pure Food Inspector, to whom a special tax must be paid; to make it a felony to advertise or solicit business for a preparation to cure cancer or any other chronic disease; to prohibit the sale of heroin in this state, and to regulate the sale of alcohol by druggists.

After remarks had been made on the various bills by Mr. G. S. Martin, Dr. Holmes, D. J. Kuhn, Dr. E. A. Ruddiman, S. C. Davis, Dr. J. M. Rogoff and W. R. White, expressing the opinion that most of the bills were revolutionary and detrimental to the best interests of pharmacy, a resolution was adopted that the first three bills do not fill the requirements of the conditions and should be rejected. The remaining bills were referred to the Legislative Committee.

Dr. J. M. Rogoff then announced that he would give a series of lectuers entitled, "A Scientific Side Line for the Pharmacist," in which he would demonstrate how the druggist can test urine, sputum and other physiological secretions, at Furman Hall, Vanderbilt, under the auspices of the Branch, and invited all who were interested to attend.

W. R. WHITE, Secretary.

College and Society

POST-GRADUATE PRIZES IN THE FORM OF A. PH. A. MEMBERSHIPS.

It will no doubt interest the members of the A. Ph. A. to learn that five prizes of nominations to memberships in the Association are offered in the department of Pharmacy of the College of Jersey City.

One is offered by Dr. Otto Raubenheimer, Professor of Pharmacy, and is to be given to the post-graduate student writing a thesis on a pharmaceutical subject. Another is offered by Dr. Joseph Koffler, Professor of Chemistry, and is to be awarded to the post-graduate student writing the best thesis on a chemical subject. The other is offered by Dr. Jacob Gutman, Professor of Physiological Chemistry and Clinical Microscopy, for the best thesis on that subject. Still another is offered by Dr. Felix von Oefele, Director of the Department of Balneology and Krunotherapy for the best thesis on a subject pertaining to this department. Last, but not least, in order to arouse more interest in Pharmaceutical History, Professor Otto Raubenheimer has offered another prize for the best thesis, written on that particular subject.

Another requirement is that besides the writing of the thesis the same also has to be properly defended before the faculty. Besides the one-year's membership in the A. Ph. A., a Certificate of Excellence issued by the Association and properly engrossed will also be awarded.

The Journal will be glad to learn of A. Ph. A. memberships offered by Colleges of Pharmacy for mention in these columns.

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NORTHWESTERN UNIVERSITY SCHOOL OF PHARMACY EXTENDS COURSE.

Northwestern University School of Pharmacy announces that beginning with the session of 1915-1916 the course for the degree of Graduate in Pharmacy will occupy two years of thirty-two weeks each; and the course for the degree of Pharmaceutical Chemist will occupy three years of thirty-two weeks each.

THE COLLEGE OF PHARMACY OF THE UNIVERSITY OF MINNESOTA.

Although the student-body of the College of Pharmacy of the University of Minnesota has for some years now been made up almost wholly of high-school graduates, high-school graduation has not heretofore been an inflexible requirement for entrance because of the desire of many Minnesota pharmacists that entrance requirements be maintained at less than a high-school qualification. It is very gratifying to be able to announce now that recently the Minnesota State Pharmaceutical Association approved the standing recommendation of the pharmacy faculty that a high-school training or an equivalent be made a prerequisite to entrance upon the study of pharmacy at the University of Minnesota. Acting upon this approval of the Association the University Regents have enacted the existing entrance conditions into requirements, so that the entrance qualifications to the College of Pharmacy of the University are now formally placed at a high-school training or an equivalent.

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NORTH CAROLINA PHARMACEUTICAL ASSOCIATION.

The thirty-sixth annual meeting of the North Carolina Pharmaceutical Association will be held in Durham on the 15, 16, 17 of June, 1915.

An exceptionally large attendance at the meetings is expected this year because of two factors which tend to make successful conventions: First, the traveling men have organized into an Auxiliary of the Association and are going to assist in making the Durham meeting a success from an entertainment standpoint, and second the city of Durham is in the central part of the state and is easily reached from all parts of North Carolina. Then too, the local druggists are well organized, are enthusiastic over the approaching meeting, and promise to do everything possible to make things pleasant for the visiting druggists.

Mr. P. W. Vaughan, for thirteen years general secretary of the N. C. P. A., was elected local secretary at the Hendersonville meeting. Those familiar with Mr. Vaughan's deep interest in the Association and his previous record as secretary will anticipate a most successful convention.

Durham is one of the largest, if not the largest, smoking tobacco manufacturing towns in the world. It will prove a matter of great interest to take a trip through the large factories engaged in making such popular brands of "smokes" as "Bull Durham," "Duke's Mixture," "Fatimas," "Piedmonts," etc., etc., since the various processes involved are intricate, yet wonderfully fascinating.

Mr. G. C. Goodman, of Mooresville, will preside over the meetings. A number of important matters will be brought to the attention of the members. It must be, it *will* be, the best meeting in the history of the North Carolina Association.

J. G. BEARD, Secretary.

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NORTH CAROLINA SCHOOL OF PHARMACY.

Another public service feature has been added by the University of North Carolina for the benefit of pharmacists throughout the state. This feature is the establishment of a Bureau of Employment which is conducted under the direction of the School of Pharmacy, by the assistant professor of pharmacy, J. G. Beard, who is also secretary of the North Carolina Pharmaceutical Association.

This bureau meets a long-felt demand of the North Carolina pharmacists, as it offers a means whereby proprietors may secure clerks and clerks can locate positions without any expense to either party. No charge will be made for any service rendered by the bureau.

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UNIVERSITY OF ILLINOIS SCHOOL OF PHARMACY.

The members of the senior class had the pleasure of listening to two excellent lectures on the subject of "Antitoxin and Vaccines," and the second on the subject of "Physiological Testing." These were given by Mr. O. V. R. Smith, of Parke, Davis & Co.

The annual banquet of the Alumni Association was held at the Congress Hotel, Wednesday evening, April 28. Prof. Joseph P. Remington, President James, members of the faculty and members of the Alumni responded to toasts. The members of the class of 1890 celebrated their silver anniversary by attending this banquet. The graduating class, the largest in the history of the school, were the guests of the Alumni on this occasion.

Professor Day recently made an address before the evening classes of the Young Men's Christian Association at the Division Street Branch on the subject of "Pharmacy as a Profession." This was one of a series

of lectures intended to aid the young men in selecting a career.

Mr. William Loesch, of the Public Drug Company, Chicago, has presented to the School of Pharmacy a second lot of about one hundred text and reference books on pharmacy, chemistry, botany and materia medica.

The senior students recently visited the laboratories of Bauer & Black and were shown the process of making absorbent cotton, medicated gauzes and adhesive plasters. The excursion was in charge of Professor Snow. <>

PROFESSOR BEAL TO ADDRESS ILLINOIS PHARMACISTS.

A notable feature of the coming convention of the Illinois Pharmaceutical Association, which is to be held at Springfield, June 15, 16 and 17, will be an address by Prof. James Hartley Beal. The officers of the Association are very much pleased to have Professor Beal's acceptance of their invitation to adress the convention, especially in view of the fact that Professor Beal comes to the Association as an adopted son of Illinois, since he has made his home at Urbana. Professor Beal's long experience in Association activities, no less than his legal training and his participation in the framing of the Harrison Bill and other important legislation, make his accession to the Illinois Pharmaceutical Association most important and timely. It is the hope of the officers of the Association that an unusually large number of members will avail themselves of this opportunity to hear Professor Beal and welcome him to the Illinois Pharmaceutical Association. <>

A CORRECTION.

I notice an error in the article on cigarettes as published in the April issue of the Journal.

I find the error was in copying the "Analysis of Cigarette Papers. The total ash in the Austrian papers should be 4.95, and in the French 5.12, and the correction would read as follows:

Ash	4.95	5.12
Calcium oxide	88.80	84.02
Magnesium oxide	4.00	4.68
Iron, alumina and silica oxides	6.15	2.15

You understand the ash is made up of calcium, magnesium, etc., as stated in percentage, but the total ash is as above and not 88.80 and 84.02. AZOR THURSTON.

The Pharmacist and the Law

STATE ANTI-NARCOTIC BILL.*

Prepared at the request of the Executive Committee N. A. R. D., by Messrs. J. H. Beal, F. H. Freericks and Hugh Craig.

A BILL

To Provide Against the Evils Resulting from the Traffic in Certain Habit-Forming Narcotic Drugs, to Regulate the Sale and the Having in Possession of Such Drugs, and Providing Penalties for the Violation Thereof.

Be it enacted, etc.

Section 1. It shall be unlawful, except as hereinafter provided, for any person to have in possession, or to deal in, dispense, sell, or otherwise dispose of any opium or coca leaves, alpha- or beta-eucaine, or any compound, manufacture, salt, derivative, or preparation thereof, or synthetic substitute therefor.

Proof of the possession of any of the substances enumerated in this section shall be construed as *prima facie* evidence of dealing in the substances so possessed.

Provided, That nothing contained in this section shall be construed to apply:

(a) To decocainized coca leaves or preparations made therefrom which do not contain cocaine, or to chemical constituents or derivatives of opium or coca leaves or of their alkaloids which do not possess narcotic or habit-forming properties.

(b) To the possession of any of the abovementioned substances by licensed physicians in connection with the practice of medicine or surgery; by licensed dentists in connection with the practice of dental medicine or surgery; by licensed veterinarians in connection with the practice of veterinary medicine or surgery; by licensed pharmacists in connection with the practice of pharmacy, by hospitals or similar institutions, when intended exclusively for the treatment of patients in said hospitals or institutions; by manufacturers; by wholesale druggists, or by colleges, scientific or public institutions when intended exclusively for educational, scientific or public purposes, provided that all such hospitals or similar institutions, wholesale druggists or

* The bill adds no additional burdens, as it corresponds with the Harrison Law.

manufacturers have been duly authorized or licensed in accordance with Section 3 of this act.

(a) To the possession of any of the abovementioned substances by a common carrier for delivery to a specified consignee; by a warehouseman holding possession under the direction of the owner thereof; by the agent or employe of a principal authorized by law to possess the same when such agent or employe is acting within the scope of his employment in the conduct of a lawful business; or by duly authorized officers of the law when obtained and possessed for the purpose of discharging any duty imposed by law.

(d) To the possession of any of the abovementioned substances which have been dispensed by a licensed physician, dentist, veterinarian, or pharmacist, in conformity with the provisions of this act, when possessed in a container which is labeled in conformity with the provisions of this act.

(e) To the possession by consumers or the possession or sale by retail dealers licensed by the Board of Pharmacy in conformity with Section 3 of this act, by manufacturers, wholesale druggists, licensed pharmacists, physicians, dentists or veterinarians, of bonafide medicinal preparations intended for internal use which do not contain in one fluidounce or in one avoirdupois ounce, separately, more than two grains of opium or the extractive of two grains thereof, or more than one-fourth grain of morphine or any salt thereof, or more than one graifi of codeine or any salt thereof, or more than one-eighth grain of heroin or any salt thereof; or of bonafide medicinal preparations suitable for external use only which do not contain cocaine, or alpha- or beta-eucaine, or any salt or derivative thereof or synthetic substitute therefor; *provided*, that all such preparations shall contain other active drugs in sufficient proportion to confer upon them other and additional medicinal properties than those possessed by the unmixed drugs, salts or derivatives named in this section; *and provided further*, that all such preparations are possessed, sold or otherwise disposed of solely for use as medicines and not for the purpose of evading the intendment of this act.

(f) To the sale or other disposal of the substances enumerated in this section by manufacturing pharmacists or chemists, wholesale druggists or licensed pharmacists, to manufacturers, wholesale druggists or licensed pharmacists, or to licensed physicians, surgeons, dentists, or veterinarians, or to hospitals or similar institutions, colleges or public institutions: *Provided*, That a record of every such sale or disposal, showing the date of the transaction, the names and addresses of the parties thereto and the names and quantities of the substances so transferred be made and kept on file by both parties to the transaction for two years, open to inspection by duly authorized officers of the law; *provided also*, that the making and preserving of any order or duplicate, or of any record required by any other law to be made and preserved, which order, duplicate or record shall set forth the facts above required to be stated, shall be deemed a satisfactory compliance with the provisions of this paragraph.

Whenever required so to do by the authorities charged with the duty of enforcing the provisions of this act, any person possessing, selling or distributing any of the substances enumerated in this section shall render an itemized statement, verified by affidavit, of all such substances received by him within the ninety days next preceding the date of such request, including the names of the persons from whom received, the date when received, and the quantity in each instance received.

(g) To the sale or other disposal to a consumer of any of the substances enumerated in this section, by a licensed pharmacist pursuant to the written prescription of a licensed physician, dentist, or veterinarian. *Provided*, That with the exception of any prescription for a preparation which is exempted under paragraph (e) of this section, such prescription is dated as of the day on which it was written, bears the signature and address of the prescriber and the name of the person for whom the substance is intended; or if intended for a lower animal, shall state the kind of such animal and the name of the owner thereof; *provided further*, that such prescription when compounded or dispensed shall be serially numbered, dated, and filed by the compounder, and be retained on file for two years open to inspection by any duly authorized officer of the law; *and provided further*, that no such prescription shall be filled more than once, and no copy of such prescription shall be given to any person, except to the original prescriber or to a duly authorized officer of the law for use in connection with the enforcement of this act or of any other law; *and provided further*, that the medicine dispensed upon such prescription shall be delivered in a container which is labeled with

the serial number of the prescription or the name of the substance, the date when dispensed, the name of the person for whom intended, or if intended for a lower animal, with the kind of such animal and the name of the owner thereof, the name of the prescriber, and the business name and address of the establishment from which dispensed.

(h) To the administration, sale or other disposal, except as hereinafter provided, of any of the above-mentioned substances by a licensed physician or licensed dentist to a patient upon whom he is in professional attendance, or to the administration of such substances to a lower animal and not to a human being by a licensed veterinarian: *Provided*, That such licensed physician, licensed dentist or licensed veterinarian, shall keep a record of the name and address of the patient, or, if intended for a lower animal, of the kind of animal and the name and address of the owner thereof, the date of the sale or other disposal, and the name and amount of the drug transferred, in every such instance as he may dispose of otherwise than by direct administration to a patient, more than six grains of opium or the extractive of six grains thereof, or more than one grain of cocaine, or more than one grain of morphine, or more than four grains of codeine, or more than one-half grain of heroin, or of any salt or derivative of, or synthetic substitute for, any of the foregoing substances. The record so made shall be preserved on file for a period of two years and be open to inspection by any duly authorized officer of the law, and except when administered directly to a patient, all such substances shall be delivered in a container which shall be labeled in conformity with the provisions of paragraph (g) of this section.

Section 2. It shall be unlawful for any licensed physician, licensed dentist, or other person to furnish to or prescribe for the use of any habitual user of the same any of the substances enumerated in Section 1 of this act, or for any licensed dentist to furnish or prescribe any of the said substances for the use of any person not under his immediate treatment as a dentist or for any other purpose than as a part of such treatment, or for any veterinarian to furnish or prescribe any of the said substances for the use of any human being.

The provisions of this section shall not be construed to prevent a licensed physician from prescribing in good faith for the use of a patient under his care for the treatment of a drug habit any substances he may deem necessary for such treatment: *Provided*, That the prescriptions given, the records to be made and preserved, and the labels of the containers in which the substances are dispensed shall conform in all respects to the requirements for prescriptions, records and labels provided in Section 1 of this act; *provided further*, that the physician shall immediately notify the state board of health of the beginning of the treatment of a patient for a drug habit, and the name and address of such patient, and shall repeat such notice every thirty days during the period such treatment is continued. It shall be the duty of the state board of health to retain on file for a period of two years all notices received by it under this section, which notices shall be open to inspection by the authorities charged with enforcing the provisions of this act.

Section 3. Where the possession, sale or other disposal of any the substances enumerated in Section 1 of this act by manufacturers, wholesale druggists, hospitals, or similar institutions, is not under the supervision of a licensed pharmacist, physician, dentist or veterinarian, a license shall be secured from the state board of pharmacy authorizing such possession, sale or other disposal.

The state board of pharmacy is authorized to license as a retail dealer for the purposes of this act the proporietor or manager of a retail merchandising establishment having a fixed location not less than one mile distant from the place of business of a registered pharmacist or from the office of a licensed physician, authorizing such licensed dealer to possess, sell and otherwise dispose of the preparations which are exempted under paragraph (e) of Section 1.

Such licenses shall be issued by the state board of pharmacy only when said board is satisfied that the possession, sale or other disposal authorized thereunder is for legitimate use only, within the intendment of this act.

The said board of pharmacy is authorized to require the prepayment of an annual fee of one dollar for each license issued to a manufacturer, wholesale druggist, hospital or similar institution, or retail dealer, in conformity with the provisions of this section.

Section 4. Whoever shall violate or fail to comply with any of the provisions of this act, or shall make or cause to be made any false statement in any of the prescriptions, records or reports required by this act, or shall muti-

late, conceal or destroy any of the said prescriptions, records or reports, or whoever, for the purpose of obtaining any of the substances enumerated in Section 1 of this act, shall falsely represent himself to be a manufacturer, wholesale druggist, licensed physician, licensed pharmacist, licensed dentist, licensed veterinarian, or licensed dealer, or to be conducting a hospital or similar institution, or who shall make or issue a false or forged prescription, or alter or change a lawfully issued prescription, shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not more than $50, and upon conviction of a second or any subsequent offense shall be fined not more than $500, or imprisoned not more than six months, or both fined and imprisoned in the discretion of the court. *Provided*, That no legally licensed pharmacist shall be held liable for the innocent compounding or dispensing of any of the articles enumerated in Section 1 of this act in consequence of a false, fraudulent, altered or forged prescription which he in good faith believed to be the original unaltered prescription of a licensed physician, dentist or veterinarian, issued for a lawful purpose.

It shall not be necessary to negative any of the exceptions or exemptions of this act in any complaint, information, indictment or other proceeding laid or brought under this act, and the burden of proof of any such exemption or exception shall be upon the person claiming the benefit thereof.

Section 5. Whenever any licensed physician, pharmacist, dentist, veterinarian, manufacturer, wholesale or retail dealer, or institution shall have been twice convicted in a court of competent jurisdiction of a substantial violation of this act, the officers or board having power to issue license to such licensed persons, may, after giving the convicted licensee reasonable notice and fair opportunity to be heard, order the suspension of such license for a stated period, or may order the complete annulment and revocation of such license, if in the discretion of the board, the public welfare requires such suspension or revocation.

Whenever it shall be made to appear that any licensed pharmacist, physician, dentist, veterinarian, or other person authorized to administer or otherwise dispose of the substances enumerated in Section 1 of this act, has become addicted to the personal use of any of the said drugs in a manner contrary to the public welfare, the officers or board empowered to issue such licenses may, after due notice and a fair opportunity for a hearing to the person accused of such drug addiction, order the suspension or complete annulment and revocation of the license of such addicted person.

The provisions of this section shall not be held to prohibit an appeal to any court having jurisdiction for a review of the sufficiency of the evidence upon which the suspension or revocation of any license was made.

The word "person" as used in this act shall be construed to mean and include a firm, partnership, association, company or corporation as well as a natural person.

In case of the prosecution of an individual, a firm, partnership, association, company, or corporation for any violation of this act, the agent of such individual or the agent, officer or member of such firm, partnership, association, company or corporation, whose act or omission caused or permitted such violation may, in addition to the charge against the principal, be separately charged with such violation and on conviction shall be subject to all the penalties imposed by this act, including suspension or revocation of registration or license in the same manner as if the said act or omission had been for or on his own account.

Section 6. It shall be the duty of the state board of pharmacy or of the public prosecutor to enforce the provisions of this act, to investigate or cause to be investigated all reports of its violation, and to prosecute all violations of the same, and the said state board of pharmacy is hereby empowered to retain and employ such agents, inspectors, and other persons as it may deem necessary for that purpose.

All fines recovered under this act shall be paid to the order of the state board of pharmacy, and by said board shall be covered to the state treasury.

Section 7. That the sum of ——— dollars, or so much thereof as may be necessary, be and hereby is appropriated, out of any money in the state treasury not otherwise appropriated, for the purpose of carrying the provisions of this act into effect.

Section 8. All acts and parts of acts in conflict with the provisions of this act shall be, and the same are hereby repealed.

Section 9. This act shall be in force from and after the ———.

Necrology

FRANK D. OSBORN.

Frank D. Osborn, of Davenport, Iowa, was born at Davenport, Iowa, on December 16, 1884, and died after a long illness, on February 24, 1915, at the home of his parents, Mr. and Mrs. C. E. Osborn, of Davenport. He received his early education in the public schools of his native city, graduating from the high school in 1903. He then was apprenticed to S. Moetzel for two years, and later, entered the School of Pharmacy, University of Michigan, graduating with high honors in 1908. After graduation, he was employed as chemist for the Davenport Corn Products Refining Co., and then opened the first drug store in Bettendorf, Iowa, and was, also, the first postmaster of that city.

Mr. Osborn was a member of the Alumni Society of the University of Michigan, and the American Chemical Society, and became a member of the American Pharmaceutical Association in 1913. J. W. E.

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FREDERICK A. HUBBARD.

Frederick Arthur Hubbard, of 8 Hollis Street, Newton, Mass., for twenty-seven years a pharmacist and formerly an alderman of that city ,died on April 19, 1915, from heart disease, at his summer home, Duxbury, Mass. He was born in Manchester, N. H., and was 56 years of age. The funeral services were held at the Methodist Episcopal Church on April 22d.

Mr. Hubbard was a member of the American Pharmaceutical Association since 1907 and Chairman of the New England Branch, Ex-President of the Massachusetts State Pharmaceutical Association, and a member of its Legislative Committee. He was, also, a member of the Massachusetts College of Pharmacy and one of its Trustees, and President of the National Association of Boards of Pharmacy (1907-1908). He served two terms as a member of the Massachusetts State Board of Pharmacy, and was a member of the National Association of Retail Druggists. He was actively interested in the Dalhousie Lodge of Masons, and the Hunnewell Club, and was the first president of the Newton Board of Trade.

Mr. Hubbard leaves a widow, a daughter, Mrs. Florence Whitcomb, of Oxford, Ohio, and a son, George W., a student at the Massachusetts College of Pharmacy and associated with him in business.

Mr. Hubbard was highly respected as a citizen and by the members of his profession. He gave generously of his time for the benefit of his fellow pharmacists, and in both state and national legislation he was deeply interested. He was a man among men and a credit to his craft. All honor to his memory. J. W. E.

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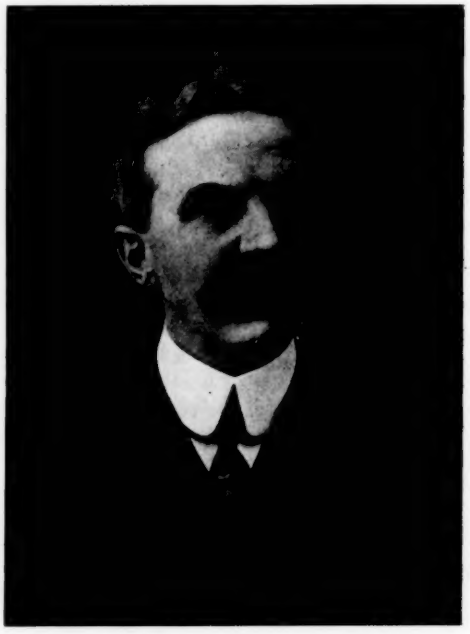
FRED. M. FISK.



Fred M. Fisk, manager of the European headquarters of Parke, Davis & Co., in London, died on the evening of Saturday, April 10. While the end came suddenly, Mr. Fisk had been seriously ill and in the hands of physicians for a number of months.

Mr. Fisk's connection with Parke, Davis & Co. covered a period of something like thirty years. He was employed to explore what was then new territory for the products of the house. First "covering" the Pacific Coast, he was subsequently sent on a trip around the world. His success in introducing the preparations of the house in countries like Japan, India and Australia ultimately led to the establishment of branches and to the final development of an enormous trade in those sections of the world.

Mr. Fisk was born in Adrian, Michigan.

He was prominent in the Masonic circles of London, and was master of the American Masonic Lodge at the time of his death. In the American Colony he was always conspicuous; he was secretary of the London branch of the American Navy League, and president of the American Society.

Council Business

COUNCIL LETTER No. 13.

Philadelphia, Pa., January 4, 1915.

To the members of the Council:

Motions No. 23 (*Approval of General Rules of Publication*), *No.* 24 (*Election of Local Secretary for* 1915) and *No.* 25 (*Disapproval of Proposed Exhibit at the Panama-Pacific Exposition*) have each received a majority of affirmative votes.

The following communication has been received from Frank H. Freericks:

"In voting 'No' on Motion No. 22, I feel the need for making a short explanation: The discussion which has taken place with reference to invitations was in each case an expression of an individual opinion or view, and in no manner can it be regarded as an expression of the Council. If any of those who are directly concerned have read or do read the discussion, they will realize that the entire matter was tabled (if such be the case) purely because of propriety and thoughtful consideration. It does not seem to me that the matter will be helped any by expressing sincere appreciation for unselfish work done, and I do not understand a New Year's greeting to be called for any more this year than any other year. I assume that all brother pharmacists in every one of the countries now at war have been doing their full duty, but frankly I do not know a thing about it, and I cannot well express appreciation for the doing of something which I do not know to have been done. Am sure that it will not harm anyone to send the "greetings" and to express appreciation, but somehow I am inclined to feel that some of the recipients would smile at our expense."

If any of the members of the Council wish to change their votes on Motion 22, the opportunity is open, as the vote has not been announced.

George M. Beringer writes as follows:

"Beyond any doubt the pharmacists of the countries engaged in the present unfortunate European war are suffering many hardships and their privations and tribulations may be expected to be still further increased as the war progresses.

Already there comes to us, through Holland, an appeal for aid to the pharmacists of Belgium, many of whom have lost everything. A similar condition probably exists among the pharmacists of Northern France and in other countries where battles are being fought or have already been waged.

With peace will come even more urgently the need for the rehabilitation, the re-establishment of our brother pharmacists in these foreign countries. Many will need our aid to secure the opportunity to re-engage in their peaceful avocation as a means of livelihood.

I, therefore, recommend and will move that the American Pharmaceutical Association through the Council, appoint a Committee to co-operate with committees appointed for a similar purpose by other pharmaceutical, drug and chemical societies for the purpose of soliciting funds to aid the worthy and needy foreign pharmacists who have suffered by this war, irrespective of their nationalities.

By such a movement, American pharmacists, while maintaining neutrality, can, nevertheless, demonstrate that they are actuated by a true spirit of philanthropy to alleviate the suffering, to mitigate the hardships and to extend a helping hand to our brothers in distress across the seas."

The following communication has been received:

Philadelphia, Pa., January 2, 1915.

Members of the Council:

Gentlemen—It will be recalled that at the Detroit (1914) meeting of the Association the position of Editor of the Journal was not filled, but that the matter of selecting an Editor was left to the Committee on Publication with power to act, subject to the approval of the Council.

The Committee on Publication not being able to decide the question at the Detroit meeting, engaged Ernest C. Marshall as Acting Editor, from month to month, until the Editor could be chosen. Professor William B. Day consented to serve as General Secretary, and on the nomination of the Chairman of the Committee on Publication, was so elected.

The position of Editor was then offered to Professor E. G. Eberle, who promised to decide later. He has decided to accept the position and has presented his application as follows:

Dallas, Texas, December 1, 1914.

Mr. J. W. England, Chairman of Committee on Publication, Philadelphia, Pa.:

Dear Mr. England—Replying to the request of the Committee on Publication for a proposition under which I would accept the editorship of the Journal of the American Pharmaceutical Association, my present connection should perhaps be referred to.

In the first place, the consideration came, as you know, through suggestion, and appealed to me as a possibility for service to the Association which might reflect credit upon myself and to this end my best efforts would be directed.

My several positions which will terminate when I leave here bring me about $4,000 yearly, so that financial betterment is hardly the object with me; however, I must give thought to the financial side as quite a number look to me for support.

Leaving here, I am burning the bridges, some of which have been constructed by long friendships and service in behalf of the druggists in this section. It takes only a short while to give up that which has required years to obtain. You are more or less familiar with my activities.

Leaving now reference to my own affairs and speaking of the Journal; there will be opportunties for business throughout the year, but as advertising contracts are usually made following annual meetings, the most opportune time is in December and January.

I am of the opinion that it would be best for the Association to have the office of Secretary and Editor separate, because this insures two good workers instead of one, though very likely will involve greater expense.

These thoughts have had a part in shaping my offers which I submit for your consideration, though I think some flexibility ought to be provided for. I am open to suggestions and will be glad to have every phase discussed frankly and freely, as we are all working for the best interests of the Association.

Respectfully submitted,

E. G. EBERLE.

Application of E. G. Eberle to American Pharmaceutical Association for position of Editor of the Journal of American Pharmaceutical Association, General Secretary, etc.:

To the Committee on Publication of the American Pharmaceutical Association:

(1) I will assume the editorship and general management of the Journal of the American Pharmaceutical Association, to include the position of Advertising Manager and also the duties of General Secretary of the American Pharmaceutical Association, for a salary of $4,000 per annum, payable in monthly installments of $333.33⅓, to begin March 1, 1915, or as soon thereafter as may be practicable.

I am to be allowed two stenographers, who are to be compensated by the Association. The office expenses are to be agreed to between the Committee on Publication or those in authority and myself to be paid by the Association.

The necessary expenses incurred in attending the annual meeting of the Association are to be paid by the Association, and also all other trips made in an official capacity and sanctioned by the Committee on Publication or those in authority. All expenses, except the salaries provided, shall first be submitted for approval to the Committee on Publication or those in authority.

Or (2) I will assume the editorship and general management of the Journal of the American Pharmaceutical Association for a salary of $3,500, payable in monthly installments of $291.66⅔.

My duties shall include those of the Advertising Manager, to begin on March 1, 1915, as above indicated.

I am to be allowed one stenographer at a salary to be agreed upon between the Committee on Publication or those in authority and myself, and paid by the Association, as also the necessary office expenses.

My expenses incurred by attending the annual meetings of the Association and those made necessary for the transaction of official business shall be paid by the Association. The latter shall always be authorized by the Committee on Publication or those in authority.

Respectfully submitted,

E. G. EBERLE."

The Committee on Publication has given very careful consideration to this application. Professor Eberle is one of the most earnest workers of the American Pharmaceutical Association and one of the most able pharmaceutical journalists. It is scarcely necessary to refer to his work as President of the American Pharmaceutical Association, as Chairman of the Council and as member of the Committee on Publication. It is known to every member of the Association and known most favorably.

The Committee on Publication therefore has unanimously elected (Professor Eberle not voting) Eugene G. Eberle as Editor of the Journal under the conditions of the second proposition submitted in his application above. His engagement as Editor and Advertising Manager is to begin on March 1, 1915, or later, the exact date to be fixed by the Committee on Publication (so as to give due notice of change to the Acting Editor).

The executive work of the Association is growing very rapidly. It is probably too large a task for one man to perform the duties of both Editor and General Secretary. The work of the two offices is dissimilar, and each is of large volume. A good Editor and a good General Secretary by active co-operation can do more and better work than can one man attempting to fill both positions.

Furthermore, at a cost of only $250 more than was paid to Dr. Beal as Editor and General Secretary, and $1250 less than was paid to Dr. Beal as Editor and Mr. Marshall as Advertising Manager in 1914, we can have the unusual opportunity of securing two such men as Eugene G. Eberle as Editor and William B. Day as General Sec-

retary, a combination whose enthusiasm and efficiency will be of the greatest service in promoting the interests of the Association.

It will be noticed that no mention is made in the application as to the Home Office of the Journal, but Professor Eberle states that he will leave this "entirely with the Association." The Committee on Publication is of the opinion that Columbus should be retained for the Home Office at least until the annual meeting, when the subject can be considered more fully.

The Committee on Publication asks the Council to ratify its action in selecting Eugene G. Eberle as Editor of the Journal and Advertising Manager under the conditions above stated.

Very truly yours,

J. W. ENGLAND,

Chairman of Committee on Publication.

J. W. ENGLAND,

Secretary of the Council.

415 N. Thirty-third Street.

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COUNCIL LETTER No. 15.

Philadelphia, Pa., February 8, 1915.

To the Members of the Council:

Gentlemen: After the issuance of Council Letter No. 13, the following motion was received: "Moved by C. A. Mayo, seconded by H. Englehardt, that the action of the Committee on Publication in the selection of Eugene G. Eberle as Editor and Advertising Manager of the Journal of the American Pharmaceutical Association, as reported in Council Letter No. 13, be ratified by the Council."

Later (January 23), the following letter from Geo. B. Kauffman came to hand:

"In view of conditions which have arisen and of certain statements and charges made respecting the conduct of the affairs of the Association, growing out of the action of the Publication Committee in the matter of the selection of the Editor, which said statements and charges deserve more than passing comment, I move that action by the Council concerning the action of the Publication Committee in the matter of Editorship, be deferred until the next regular meeting of the Association, and that Mr. Marshall, the present Acting Editor, be given a hearing before the Council at that time."

The motion was seconded by E. H. Thiesing.

The question then arose as to which motion should be submitted first to the Council and it was referred to Chairman Eberle, of Dallas, Texas, who replied that, under the circumstances, he felt disqualified to act, and asked that the question be referred to Vice-Chairman Godding, of Boston. The latter has decided that the motion of Mr. Kauffman's should be submitted first.

Do you favor motion of Mr. Kauffman, seconded by Mr. Thiesing, as given in above letter? This will be regarded as *Motion No. 28 (Deferring Action on Editorship until next Regular Meeting of Association, etc.)*

In connection with this motion, the following letter has been received from General Secretary Day:

Members of the Council:

Gentlemen—I understand that a motion is to be presented to the Council moving that the action of the Committee on Publication in the matter of Editorship of the Journal be deferred until the San Francisco meeting of the Association on the ground, practically, that the selection of the Editor has been hasty and without proper consideration of the merits of all the candidates. As a matter of fact, may I say, on behalf of the Committee on Publication, that the subject of Editor has received most careful and serious consideration by the Committee, not only at Detroit, but since. Every candidate has received fair treatment. Injustice has been done to no one. All were weighed in the balance, and the unanimous decision of the Committee was that, in journalistic experience, in official experience in the work of the Association, and in educational experience, Eugene G. Eberle was pre-eminently the best man. It is the opinion of the Committee that the welfare of the American Pharmaceutical Association is or should be superior to the interests of any individual member. The Association is not intended to create or provide a berth for anyone.

So far as the present Acting Editor is concerned, the Committee has nothing but kindly feelings. His interests were fully considered. He was engaged at Detroit as Acting Editor, *tentatively*, and accepted the position under such conditions. He was not promised the position of Editor, and that he failed of election as such, is not to his discredit, but to the fact that a more experienced man was found.

So, with "malice toward no one, with charity for all," I ask the members of the Council to vote down the resolution to defer, if such be presented, and pass a motion to ratify the action of the Committee on Publication in selecting Eugene G. Eberle as Editor. I am, yours truly,

WM. B. DAY,

General Secretary.

Chicago, February 4, 1915.

J. W. ENGLAND,

Secretary of the Council.

415 N. Thirty-third Street.

COUNCIL LETTER No. 16.

Philadelphia, Pa., February 10, 1915.

To the Members of the Council:

Motions No. 22 (Greetings to Pharmacists and Pharmaceutical Associations of other Nations) and *No. 27 (Election of Members; Applications Nos. 59-75 inclusive)* have each received a majority of affirmative votes.

In reference to Tentative Program for Fifty-third Annual Meeting (C. L. No. 14), M. I. Wilbert suggests that the time of holding the meeting of the Committee on Nominations (Monday) be made either one hour before the time of the President's Reception or one hour before the Second General Session, and to meet this suggestion, if there is no objection, the time will be made 8:30 p. m.

Wm. J. Lowry, Jr., Secretary of the Baltimore Branch, advises that Henry P. Hynson has been elected Council Representative of the Baltimore Branch, succeeding John B. Thomas.

F. W. Nitardy, Secretary of the Denver Branch, advises that Samuel T. Hensel has been elected Council Representative of the Denver Branch, succeeding John A. Martin.

Jerome A. Wilkerson has been elected Council Representative of the St. Louis Branch, succeeding Wm. K. Ilhardt. (Journ. A. Ph. A., Dec., 1914, 1747.)

A number of communications have been received relative to Motion No. 26 (Reply to Article in Pearson's Magazine), as follows:

M. I. Wilbert—"Motion No. 26: This is neither wise nor expedient."

L. E. Sayre—"Motion No. 26: I would say p. 49, line 6 takes the valuable time, etc."

E. G. Eberle—"Motion No. 26: While my conclusions were to let the article go unnoticed rather than give it further publicity, the answer is well-worded, and I can offer no objection."

F. C. Godbold—"Motion No. 26: In voting 'no' on reply to article in Pearson's Magazine, I believe that it is best for the pharmacist as individuals to answer to their patrons such complaints, and for the Association to keep out of print on the matter. I have been answering this charge for years to individuals, as occasion required, to the satisfaction of the individual. I remember on one occasion a customer 'phoned for 25c worth of Brown Mixture, the XX kind. I sent for the prescription which was Brown Mixture Tablets, No. XX. Take as directed."

T. F. Main—"Motion No. 26: In regard to the reply to article in Pearson's Magazine, it is very nicely worded but I am afraid it is over the heads of the people who read that magazine.

I have always given a short answer to those who complained that pharmacists charged one price for an article sold in bulk and a higher price for the same thing when dispensed on prescription, by calling the attention of complainant that the pharmacist's charge did not differ in any way from the practice prevailing in the trades, for instance, if one orders a carpenter to send 12 foot of 1-inch plank, he gets a bill for it, but if he orders him to send up a 12-foot 1-inch plank cut into three foot lengths, the same to be put up in a closet as shelving, he will get a bill for so many feet of plank, so many screws, so many brackets and finally for so much time, and I have always contested that the pharmacist's charge for his professional time was in the majority of cases far lower than the time charged by the ordinary laborer in the trades."

C. T. P. Fennel—"Motion No. 26: In reference to reply to Pearson article I will say that the opening statement is subject to criticism. Dispensing of medicines and their preparation in suitable form was in the hands of the physician. Alchemy next arose as an independent science. Paracelsus was the founder of Pharmacy (that is the preparation of medicine for the purpose of curing disease) by placing Alchemy with Medicine, and eventually the science of Chemistry and Pharmacy as separate sciences were evolved.

Take as a concrete example, etc. I would not use the term Baking Soda as synonymous with Bicarbonate of Soda. Baking Soda need not conform to the U. S. P. requirements, and hence the article usually sold by pharmacists and grocers, etc., is very much inferior and cheaper to the pharmacopœial Bicarbonate of Soda. I would include in the paragraph the fact that there is a vast difference between Alum, Borax, etc., used for technical purposes and those used for prescription work. Epsom Salt, the by-product of the manufacture of CO_2 gas, has no commercial value, but it is sold in immense quantities by certain class of druggists in pound packages. The article does

not conform to the U. S. P., and hence price-comparisons in prescription is not possible."

S. L. Hilton—"Motion No. 26: With reference to Motion No. 26, permit me to say that I for one do not approve of any such action by the Council; there never was or never will be any question that is handled by a newspaper man, no matter how much merit there may be in it, that can be brought to the attention of the public in which the other side will not get the worst of it; we must remember that they have everything to gain and nothing to lose, and they have every means at their command to combat every argument that may be presented, and if it has any merit or justice in it they will resort to ridicule to break it down. 'It is always the hurt dog that hollers,' and I do not want to see the American Pharmaceutical Association placed in this position to be ridiculed, consequently I must vote 'No' on Motion 26.

I might also add that I had the same proposition put up to me to answer shortly after its publication; it took me but a few minutes to decide that it was absolutely useless for the reasons that nothing would be gained as above pointed out and I could not help but losing out."

W. C. Alpers—"Motion No. 26: As to the statement prepared by the Philadelphia Branch of the American Pharmaceutical Association every pharmacist will readily subscribe to every word stated there. In my mind, however, the wording of the statement is much too mild. Stronger words expressing indignation rather than complaint should be used and the miserable vilifier punished and refuted in a manner that cannot be misunderstood. Why not ask him if the sheet of paper on which he wrote his invectives and the ink that he shamefully spilled in doing so were worth the price that he was paid for his article? Why not make the suggestion that a national board of magazine writers be created and that each writer should pass an examination as to his qualifications just as the pharmacist has to do? Such an arrangement would eliminate the miserable ignoramuses that now write on pharmaceutical, chemical and medical subjects for the purpose of creating sensation with total disregard of facts and truth.

These are only a few of the suggestions that might be made in reply to the article published in Pearson's Magazine."

Frederick J. Wulling—"Motion No. 26: Concerning the reply to Pearson's Magazine, let me say that I would not dignify the article by any reply at all. I believe the Association should entirely ignore the article, for I believe it has not injured pharmacy in the eyes of fair-minded people. If the reply is published, I would suggest the omission of the poetry because it is not sufficiently clear and apropos for the average reader. The reply would also need editing. I take it that Motion 26 intends to give the Philadelphia Branch the privilege to send this reply. In that case it should appear that the reply is by the Philadelphia Branch and not by the Association. If the reply is to be by the Philadelphia Branch, I would not mind approving the motion, but if the reply is intended to come from the A. Ph. A., then I vote 'No.'"

Professor Wulling's point that Motion No. 26 intends to give the Philadelphia Branch the privilege of sending the reply submitted to the Council and represents only the opinions of the Branch and not the Council will be (if the motion carries) adopted, unless there be objection.

Motion No. 29 (Applications for Membership). You are requested to vote on the following applications for membership:

No. 76. Samuel Cahan, 864 North Tenth St., Philadelphia, Pa., rec. by Harry Seidman and Frank X. Moerk.

No. 77. Louis H. Luck, 198 W. Union St., Burlington, Vermont, rec. by John G. Godding and Wm. H. Zottman.

No. 78. Roy Chester Charron, 426 Newbury St., Boston, Mass., rec. by Hugh C. Muldoon and Theodore J. Bradley.

No. 79. A. Julius Lindgren, 402 Central Ave., West Duluth, Minn., rec. by W. A. Abbott and E. L. Newcomb.

No. 80. Henry Duncan Llewellyn, West Side Square, Mexico, Mo., rec. by H. M. Whelpley and J. W. Mackelden.

No. 81. Roy C. Roe, 709 S. Winchester Ave., Chicago, Ill., rec. by G. D. Timmons and E. H. Wisner.

No. 82. William O. Speer, 458 Greenwich St., Valparaiso, Ind., rec. by G. D. Timmons and E. H. Wisner.

No. 83. W. M. Cordivenus, 653 Sutter St., San Francisco, Cal., rec. by Clarissa M. Roehr and H. M. Whelpley.

No. 84. Clarence Isaac Pendleton, 114 Hillside Road, Watertown, Mass., rec. by Theodore J. Bradley and Hugh C. Muldoon.

No. 85. John L. Hess, 2038 Cherry St., Philadelphia, Pa., rec. by G. H. Meeker and J. W. Sturmer.

No. 86. Maxwell M. Becker, 2465 N. Garnet St., Philadelphia, Pa., rec. by J. W. England and J. G. Roberts.

No. 87. Antonio Caparo 'y Fernandez, P. O. Box 50, Havana, Cuba, rec. by Jose P. Alacan and Jose Guillermo Diaz.

J. W. ENGLAND,
Secretary of the Council.
415 N. Thirty-third Street.

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COUNCIL LETTER No. 17.

Philadelphia, Pa., February 22, 1915.

To the Members of the Council:

Motion No. 26 (*Reply to Article in Pearson's Magazine representing opinions of Philadelphia Branch*) has received a majority of affirmative votes.

Under date of January 6, a motion was received from C. A. Mayo "that the action of the Committee on Publication in the selection of Eugene G. Eberle as Editor and Advertising Manager of the Journal of the American Pharmaceutical Association, as reported in Council Letter No. 13, be ratified by the Council."

On January 23, a motion was received from Geo. B. Kauffman, deferring action on editorship until the next regular meeting of the Association, etc. (Council Letter No. 15). This motion was submitted to the Council, being regarded as *Motion No.* 28.

The results of the vote on this motion are as follows:

Yes—Messrs. Kauffman, Thiesing, Alpers, Packard, LaPierre, White, Schafer, and Hynson—8.

No—Messrs. Godding, Gordon, Gietner, Beringer, McElhenie, Day, Rogers, Seltzer, Diehl, Whelpley, C. E. Caspari, Hensel, Godbold, Wulling, Fennel, England, Osseward, Clark, Hilton, Koch, Claus, Stewart, Wilkerson and Sayre—24.

Not voting—Messrs. Eberle, C. Caspari, Jr., Englehardt, Freericks, Havenhill, Hopp, Mayo, Schneider and Wilbert—9.

Motion No. 28 has therefore not been carried.

The following communication has been received from C. Herbert Packard:

February 8, 1915.

To the Members of the Council of the American Pharmaceutical Association:

Gentlemen—We have received statements regarding the filling of the position of Editor of the Journal, and I believe it is my duty to write in favor of Mr. Marshall,—first, because he has filled the position made vacant by Doctor Beal's illness, in a most acceptable manner.

Secondly, I ought to speak of Mr. Marshall, because I probably know him better than many of the Council.

I first met Mr. Marshall in 1890 or '91, at a time when he delivered an address to a graduating class of the Massachusetts College of Pharmacy. It was without doubt the strongest and best oration I have ever heard and as such made a lasting impression upon me.

Since that time he has always shown a loyalty to pharmacy, the ability to fill every position given him, working with untiring effort in the discharge of the same.

Our first thought should be to the person filling the position at the time of an election, if his work has been well and properly done. In reference to Mr. Marshall, I have never heard a word of inefficiency, but much of praise.

Regarding Mr. Eberle for the position, will say that there is not a gentleman in the Association better equipped or one I admire greater.

Mr. England and every member of the Committee on Publication have my greatest respect as gentlemen, men of experience and of ability. I cannot help, however, to believe that they have overlooked just as good a man for the work as can be found, "overlooked because he is at hand."

It is not necessary to go abroad when looking for a man without first comparing the ones at home with the best.

In justice to Mr Marshall for the necessity of moving his home, the expense he has had to meet, his ability to fill the position, and, lastly, his liking for the work, I believe we should consider him first, and I therefore make a motion that Mr. Ernest C. Marshall be elected Editor of the Journal of the American Pharmaceutical Association.

Fraternally yours,
C. HERBERT PACKARD.

I second the above motion—Elie H. LaPierre.

Mr. Packard's motion is obviously offered as a substitute motion for Mr. Mayo's motion of January 6.

C. T. P. Fennel writes as follows:

Cincinnati, February 10, 1915.

Mr. J. W. England, Secretary of the Council, A. Ph. A.:

Dear Sir—Relative to the selection of Eugene G. Eberle as Editor and Advertising Manager of the Journal of the American Pharmaceutical Association by the Committee on Publication: I can find at this time no valid reason why ratification by the Council of the action of the Committee should be deferred to the general meeting of the Association. The action of the Committee has been deliberate in safeguarding the interests of the national body. Their viewpoint and scope of investigation is far greater than that of any single individual and should therefore receive primary consideration. The sooner ratification by Council of the Committee's action is taken, the better for the welfare of the Journal as well as the national body. Under this view, I must vote "no" on Motion No. 28. Your truly,

C. T. P. FENNEL.

George M. Beringer writes as follows:

Camden, N. J., February 12, 1915.

Members of the Council:

Gentlemen—I have received from Mr. C. Herbert Packard his letter containing the motion seconded by Mr. LaPierre.

In no way do I intend to say anything prejudicial to Mr. Marshall. The members of the Council should be fully acquainted with the situation confronting them. The Committee on Publication have not acted at all hastily nor unfairly. At the Detroit meeting, their report was accepted and they were empowered to do certain things in behalf of the Association. In the discharge of one of their specific duties, they have weighed carefully the availability of the different names that have been presented for the editorship. Their decision in favor of Prof. Eberle appears to have been unanimous and without any prejudice to any of the other candidates whose good parts have been fully considered. It is exceedingly unfortunate that Mr. Marshall should have considered the action of the Committee as a personal affront and charged the Chairman of the Committee on Publication with any unfairness to him.

Mr. Packard himself testifies in no uncertain language as to the fitness of Prof. Eberle in the statement that "there is not a gentleman in the Association better equipped or one I admire greater," and thus confirms the judgment of the Committee.

With no desire to be unfair to Mr. Marshall, the Committee must recognize its responsibility and its duty and, the duty of the Council likewise, to be entirely fair to Prof. Eberle. The latter gentlemen became a candidate for this office at the solicitation of members of the Committee on Publication who considered him to be especially fitted for this undertaking. After due consideration of the suggestion made to him at Detroit, he became a candidate and, doubtless, has severed other connections to take up this work at the time agreed upon with the Committee on Publication.

Prof. Eberle has acted in a loyal and gentlemanly way throughout this entire matter, and I feel that it is but due to him that there should be no uncertainty as to the termination of this question nor as to the loyal support of the membership of the Association to him as Editor. Without unnecessary delay, the Council should settle this question as a business proposition that has been properly placed before the body that is empowered to transact the business for the Association. Yours very truly,

GEORGE M. BERINGER.

Frederick T. Gordon writes as follows:

February 20, 1915.

To the Members of the Council:

Gentlemen—There has been some question about the ratification by the Council of the election of Eugene G. Eberle to the office of Editor of the Journal.

Prof. Eberle was the unanimous choice of the Committee on Publication for this very important position. A movement has been started to discredit the unanimous report of the Committee by substituting the name of E. C. Marshall for that of E. G. Eberle.

It seems to me that unless charges can be preferred or any evidence of unfitness on the part of Mr. Eberle to serve as Editor can be adduced, the members of the Council should uphold and approve the unanimous vote of the Committee in favor of Mr. Eberle, especially as the original motion on which the power of the Committee rests, reads as follows:

> "That the matter of selecting an Editor be left to the Committee on Publication with power to act, subject to the approval of the Council." (Journ. A. Ph. A., 1914, 1397).

It should be noted that *the Council has no power in the matter of selecting an Editor except to ratify the action of the Committee on Publication since the Committee was made the legal agent of the Council with special power conferred upon it.*

In my judgment, the Packard motion to elect Mr. Marshall Editor is clearly out of order, parliamentarily; the nomination or recommendation should have been submitted to the Committee on Publication, and then, if approved by the Committee, acted upon by the Council, in accordance with the decision of the Detroit Convention.

The Committee on Publication would be entirely justified in standing on its rights in this matter, but it is, apparently, willing to waive them and give Mr. Marshall his "day in court," if the issue can be settled quickly by the Council. There has been already too much delay and dilatory tactics. The present condition of unsettled affairs cannot be maintained without injury to the Association, and the sooner Prof. Eberle is elected Editor of the Journal the better.

If Mr. Marshall succeeds, however, in influencing a sufficient number of the Council members to reject the vote of the Committee on Publication, then the Council will be in the position of discrediting a Committee especially ordered to nominate an Editor; and such action will discredit, not only the Council and the Association, but also, the whole work of Eugene G. Eberle, who has served the A. Ph. A. so ably as President, and as Chairman of the Council since 1912. This work has been done without pay and at much personal sacrifice. Further, as Editor of the Southern Pharmaceutical Journal he will be placed in a most embarrassing position. He would be thoroughly justified to protect his own honor by sending in his own resignation as a member of the A. Ph. A.

I earnestly trust that the Council will vote down the Packard-LaPierre motion.

Very truly yours,

FREDERICK T. GORDON.

Do you favor the motion that E. C. Marshall be elected Editor of the Journal of the American Pharmaceutical Association, as made by C. Herbert Packard, and sec-

onded by Elie H. LaPierre. This will be regarded as *Motion No.* 30 (*Election of E. C. Marshall as Editor of the Journal*).

J. W. ENGLAND,
Secretary of the Council.

415 N. Thirty-third Street.

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COUNCIL LETTER No. 18.

Philadelphia, Pa., March 4, 1915.

To the Members of the Council:

Motion No. 30 (*Election of E. C. Marshall as Editor of the Journal*), a substitute motion for the Mayo-Engelhardt motion of January 6, has not been carried.

The results of the vote on this motion are as follows:

Yes—Messrs. Packard, LaPierre and White—3.

No—Messrs. Beringer, C. E. Carpari, Claus, Day, Diehl, Engelhardt, England, Fennel, Gietner, Godbold, Godding, Gordon, Hensel, Hilton, Hopp, McElhenie, Osseward, Rogers, Sayre, Seltzer, Stewart, Whelpley, Wilkerson and Wulling—24

Not voting—Messrs. Eberle, Alpers, C. Caspari, Jr., Clark, Freericks, Havenhill, Hynson, Kauffman, Koch, Mayo, Schafer, Schneider, Thiesing and Wilbert—14.

The vote will now be taken on the motion of C. A. Mayo, seconded by H. Engelhardt, of January 6, which is as follows:

Motion No. 31 (*Election of E. G. Eberle as Editor of the Journal*). Moved by C. A. Mayo, seconded by H. Engelhardt, that the action of the Committee on Publication in the selection of Eugene G. Eberle as Editor and Advertising Manager of the Journal of the American Pharmaceutical Association, as reported in Council Letter No. 13, be ratified by the Council.

The following communication has been received:

Dallas, Texas, February 26, 1915.

To the Members of the Council, A. Ph. A.:

It was my intention to maintain silence in the matter of electing an Editor of the Journal, and while I now deem it necessary to write, I will be very brief.

I desire every member to act, without prejudice or personal favoritism, that is, only in the interest of our Association. I have not nor will I be offended by any action any member may take, my desire is intense that the best interests of the Association should be kept in mind—to this end only, I plead with you.

I have never sought office in the Association nor asked any one to vote for me, unless yielding to the request, my application for the position of Editor be so considered. I have never made a sacrifice for the Association that I regret, and this applies to the present situation, nor will I take exception to any action the Association may take regarding myself.

I hope no one will be influenced by personal favor or prejudice. If these few lines have had such effect, forget them, let us all work for whatever promotes harmony and tends to enhance the value of our own association, for its members and pharmacy in general. So far as I am concerned, change of mind, amendments and substitute motions give no offense, and your action will not offend me.

It would be a source of keenest regret to have any one say justly that I had directly or indirectly been hurtful to the Association or that by word I might have prevented dissension and injury. Sincerely yours,

E. G. EBERLE.

J. W. ENGLAND,
Secretary of the Council.

415 N. Thirty-third Street.

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COUNCIL LETTER No. 19.

Philadelphia, Pa., March 16, 1915.

To the Members of the Council:

Motion No. 29 (*Election of Members; Applications Nos. 76 to 87 inclusive*) has received a majority of affirmative votes.

In re Motion No. 30, Frank H. Freericks writes:

"Please find herewith my vote on Motion No. 30, which I would ask to briefly explain: In voting "No" I do not in any manner mean to reflect upon the ability of the Acting Editor, and I would even say, that in so far as I have been able to judge the work of the Acting Editor as evidenced by the Journal issued under his direction, has been good. However, it has been my understanding right along that the Publication Committee was charged with the duty of selecting the most suitable man for the permanent Editorship, and believing the Publication Committee as a whole to be best fitted to decide upon the most suitable man, I would regard it to be distinctly wrong on my part to vote contrary to their decision and recommendation."

C. Herbert Packard writes:

"March 6, 1915.

Mr. Joseph W. England, Secretary of the Council, American Pharmaceutical Association:

Dear Mr. England—I have received Council Letter No. 18 and note that my motion has lost by a great majority.

My loyalty to Mr. Marshall was due not only to a strong friendship but a belief in his ability. We of the East, Mr. Marshall's home, know him better than members of other sections and, in working for him, believed his election would not only be advantageous to him but to the Association as well. We have witnessed his work and have known of his capabilities for years.

It is now my desire, having lost after a

fair statement, to have Motion No. 31 carried unanimously for the election of Professor Eberle.

I believe I can say for Professor LaPierre, as well as for myself, that it is our earnest wish that perfect harmony and good feeling shall exist and all members of the Council work with one thought,—the best interests of the American Pharmaceutical Association.

With highest regards to you and all our members, I am, Yours very truly,

C. HERBERT PACKARD."

Motion No. 31 (Election of E. G. Eberle as Editor of the Journal, etc.) has been carried.

The results of the vote on this motion are as follows:

Yes—Messrs. Alpers, Beringer, C. E. Caspari, Clark, Claus, Day, Diehl, Engelhardt, England, Fennel, Freericks, Gietner, Godbold, Godding, Gordon, Havenhill, Hensel, Hilton, Hopp, Koch, LaPierre, McElhenie, Osseward, Packard, Rogers, Sayre, Schafer, Seltzer, Stewart, Whelpley, White, Wilbert, Wilkerson and Wulling—34.

No—Mr. Hynson—1.

Not Voting—Messrs. Eberle, Mayo, C. Caspari, Jr., Kauffman, Thiesing and Schneider—6.

Relative to Motion No. 31, H. P. Hynson writes as follows:

"In voting 'No' on Motion 31, I would like it to be placed on record that I do so, because I think the adoption of this motion would be unsound from a business standpoint and would entail impruduent obligations upon the Association, by accepting personal sacrifices from Mr. Eberle, which are not justified and which, in all probability, will be, finally, embarrassing to the Association.

I neither vote for or against Mr. Eberle, personally, nor for or against his abilities. I am, however, fully convinced that a much younger man should be selected as editor of the Journal, one who may develop with the publication and continue useful to the Association for a greater number of years than can possibly be Mr. Eberle's good fortune."

John G. Godding writes as follows:

"General Secretary Day referred to the Chairman of the Centennial Fund the application of Prof. Edw. Kremers for $100 from the fund, the amount to be used in connection with his work on the cultivation of medicinal plants and such related subjects as the curing of cultivated and wild plants.

The application has been approved by the Committee on Centennial Fund with the understanding, if granted by the Council, it is to be handled as other appropriations made by the Council."

The above application for appropriation has been approved by the Committee on Finance.

Motion No. 32 (Appropriation of $100 from Centennial Fund for Research Work on Medicinal Plants, etc.) Moved by W. B. Day, seconded by J. G. Godding, that $100 be appropriated from the Centennial Fund to Prof. Edw. Kremers for research work on medicinal plants and cultivated and wild plants.

Motion No. 33 (Applications for Membership). You are requested to vote on the following applications for membership:

No. 88. Irvin Simpson Zeluff, 75 Barrow St., New York, N. Y., rec. by Romaine Pierson and Frank L. McCartney.

No. 89. William S. Smetana, 916 Excelsior Ave., Hopkins, Minn., rec. by John F. Danck and Edw. L. Newcomb.

No. 90. Charles Edgar McConkey, Etowah, Tennessee, rec. by J. O. Burge and Wm. B. Day.

No. 91. James David Fields, Lewis Hall, University of Washington, Seattle, Wash., rec. by C. W. Johnson and Edith Hindman.

No. 92. Forrest Omo Snyder, 423 W. 60th St., Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

No. 93. Frank E. Bogart, 15 Larned St., E., Detroit, Mich., rec. by Wm. A. Hall and N. H. Jones.

No. 94. Emile Frederick Krapf, 1068 Steuben St., Pittsburgh, Pa., rec. by J. A. Koch and John H. Wurdach.

No. 95. Carl Julius Goltz, P. O. Box 1273, Havana, Cuba, rec. by Jose P. Alacan and Jose Guillermo Diaz.

No. 96. Cornelius Wm. Dore, 119 Martin Ave., San Jose, Cal., rec. by J. G. Munson and N. A. Pellerame.

No. 97. John Harper Long, 2421 Dearborn St., Chicago, Ill., rec. by C. W. Patterson and M. A. Miner.

No. 98. Omar Harwell Whittington, Van Buren, Arkansas, rec. by J. H. Beal and W. B. Day.

No. 99. Milton P. Givens, Jr., 425 Franklin St., Denver, Col., rec. by W. A. Hover and F. W. Nitardy.

No. 100. Ray David Dame, Stratton, Nebraska, rec. by H. C. Newton and I. Curtis Arledge (nomination for membership and 1915 dues awarded by Professor H. C. Newton in recognition of excellent work at Creighton College of Pharmacy).

No. 101. John Philip Schaupner, 399 Linwood Ave., Detroit, Mich., rec. by N. H. Jones and A. A. Wheeler.

J. W. ENGLAND,
Secretary of the Council.
415 N. Thirty-third Street.

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

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<>

Changes of address since March 18, 1915.

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To 272 King George St., Annapolis, Md.

VITOUS, W. J.,
From 1627 Railway Ave., N. W., Puyallup, Wash.
To Doty, Wash.

WICH, H. E.,
From 1230 W. Stricker St., Baltimore, Md.
To 1230 N. Stricker St., Baltimore, Md.

BARNES, A. H.,
From 14 Newberry St., Boston, Mass.
To residence unknown.

BLACK, P. N.,
From 5165 Penn Ave., Pittsburg, Pa.
To residence unknown.

DAVENPORT, J. S.,
From care Chief Segt., Ft. Bayard, N. Mex.
To residence unknown.

FUSON, H. L.,
From Dover, Tenn.
To residence unknown.

KAEMMERER, W. F.,
From 410 S. 6th St., Columbus, Ohio.
To residence unknown.

MAYNARD, H.,
From 2nd Division U. S. A., Texas City, Texas.
To residence unknown.

REILLY, R. C.,
From Box 1609 Los Angeles, Cal.
To 4201 S. Vermont, Los Angeles, Cal.

SAUVINET, C. D.,
From 672 Benton Blvd., Los Angeles, Cal.
To Ninth and Vermont, Los Angeles, Cal.

BROWN, A. E.,
From Attending Surgeon's Office, Hdqs. Phil. Dept., 17 Nebraska, Manila, P. I. (Estado Mayor.)
To Segt. 1st Cl. Hosp. Corps. Recruit Depot, Ft. McDowell, Cal.

BECK, JOSEPH W.,
From Winfield, Texas
To Mt. Vernon, Texas.

FISCHNAR, J. F.,
From 6859 Wentworth Ave., Chicago, Ill.
To 6901 Wentworth Ave., Chicago, Ill.

DEJONGE, CORNELIUS,
From 23 Vine St., Brooklyn, N. Y.
To 584 E. 7th St., Brooklyn, N. Y.

LAMAR, WM. R.,
From 364 N. 7th St., Newark, N. J.
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MEAD, HAROLD B.,
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SHNITTER, ADOLF,
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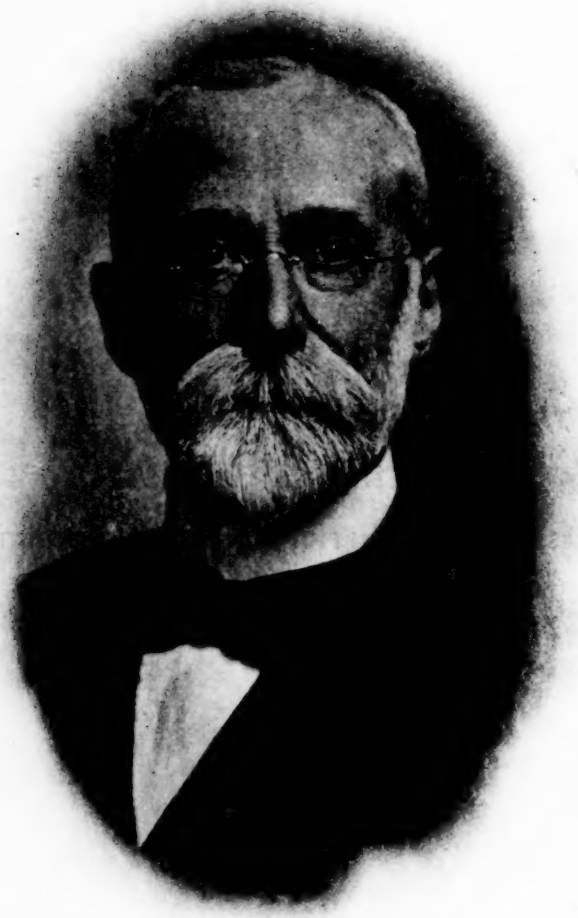

SAMUEL A. D. SHEPPARD
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